Textile World

ESTABLISHED 1868

CONTENTS DECEMBER, 1933

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MANAGEMENT

For a Textile Institute (Editorial) 55
Code Authorities Concentrate on Code Application 60
Kirstein vs. Jordan—Former Scores Victory in Bout on NRA. 61
Code Authority and Fair Practices for Woolen Men 62
Relief and Recovery Discussed at Pinehurst Meeting 80

MERCHANDISING

Russian Trade—Cotton Goods Men Organize for Share 57
Fashion Hails New Note of Glamor in Textiles 63
Conversion Factors under Cotton Processing Tax 64
Concentration on Specialty Keeps 8-Loom Weave Room Busy. 73

MILL ENGINEERING

Woolen Mill Kept Modern by Constant Improvement 58
Finisher Saves $20 Daily at One Machine by Heat Recovery.. 70
New Products and Techniques Discussed by A.S.M.E. 82
Power Saving Methods Discussed by Master Mechanics 83
New Machinery and Processes 95

MATERIALS

Heat Reflecting Properties of Dyed Wool Shown by Photos.. 76
Little Progress Despite Efforts with Angora Rabbit Wool.... 67

MEN

Overseers' Association Joins Half-Century Club 78
The 60-Hour Mill—Best Plan for Division of Work 84
The Personal Page 86
Overseers' Round-Table 100

METHODS

Strength and Yarn Count—New Correction Formula 77
Grading Methods Eliminate Guesswork in Raw Silk and Hosiery 68
Warp Mercerizing—Eliminating Preliminary Boil-Out 72
Specifying Presser Cuts—Tips for Knitting Designer 74
Modern Style Brocade—Abstract Effect 79
Weave Room to Blame for Wool Goods Imperfections 81
Throwing Illustrated—Recent Changes Stressed 87

INDUSTRY BRANCHES

Cotton Digest 104
Wool Digest 106
Silk Digest 108
Rayon Digest 110
Knitting Digest 112
Processing Digest 114
Industry-Wide Events 99

DEPARTMENTS

Overseers' Round-Table 100
Personal Page 86
Questions and Answers 102
New Machinery and Processes 95
New Publications and Business News 98
TEXTILE WORLD Analyst 85
Quotations 116

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Yarns and Knitted Fabrics

December, 1933

Textile World

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Editor: DOUGLAS G. WOOLF

For a Textile Institute

WE recommend to the textile industry the creation of an American Textile Institute, representative of all branches and consolidating the medley of trade associations which are now serving this field.

In making this suggestion, we are not implying even the most remote or indirect criticism of those associations. On the contrary, we believe they have reached a higher level of efficiency and service than have those of any other basic industry. However, we feel that a unification of them is most desirable.

First, as to why we bring this up at this particular time: The answer is that, although we have thought about it off and on for several years, the need for the change has been impressed upon us dramatically during the formulation of textile codes under the NRA. If such an organization had been in existence during this period, a good part of the conflict among branches would have been prevented. Furthermore, whereas in the past this move seemed almost impossible of accomplishment, today nothing can be so described. We are accepting changes almost every day; it is a promising period for forward-looking ideas.

The truth is that the make-up of the textile industry is gradually undergoing a radical transformation and we are slow to adjust ourselves to it. Not so many years ago, the individual branches were practically air-tight compartments; today many of the lines of demarcation are being eliminated. A manufacturer is not necessarily interested solely in cotton or wool or silk or rayon; nor is he necessarily concerned exclusively with spinning or weaving or knitting or finishing. Various combinations of the different fibers and different processes are often found under one roof. This was revealed strikingly during many of the code-hearings in Washington—and in fact was the impelling reason why, for example, it was found necessary for the cotton-textile code gradually to adopt more and more step-children.

Even where actual combination does not exist, the increasingly intimate competitive interrelationship among fibers and processes makes it dangerous for a mill-man to become single-tracked, mentally.

Consequently, in this changing set-up, a new form of coordination is needed.

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Without going into detail concerning the exact type of organization required, we can visualize an Institute comprising sections devoted to such functions as: statistical development; balancing production with demand; cost determination; applied technical research; educational forums for operating executives; etc., etc.

In addition, it would be advisable to have subgroups representative of the individual branches of the industry so that individual questions such as specialized trade-practices, new product development, and promotional campaigns could be taken up within, and specially financed by, the groups directly affected.

This is merely a suggestive outline; our ideas on the organization of the Institute are neither arbitrary nor inflexible.

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We see the following advantages in such a program:

1. The industry would have a centralized statistical agency which could supply it with a broad picture far superior to that which can now be pieced together from the statistical efforts of a

number of isolated and often conflicting agencies.

2. The industry would be enabled to avoid the type of conflict which has featured the jurisdiction of the various codes—and which will be present in any attempt toward economic planning, under the present associational set-up. In fact, we regard this unification as indispensable if the textile industry is to be able to plan definitely for its future as a whole.

3. The industry would have a centralized organization which could apply the results of the more fundamental technical research undertaken under the auspices of such organizations as the U. S. Institute of Textile Research and the Textile Foundation.

4. The industry would be able to conduct on a large scale the type of educational and inspirational activities among overseers and other operating executives now being conducted so excellently by such organizations as the Southern Textile Association and the Textile Forums of the National Association of Cotton Manufacturers.

5. The industry would have a centralized mouthpiece through which its aims and ideals could be translated to the general public—something which it has never had, and from the lack of which it has suffered. The unification would permit a forceful presentation of matters affecting the industry as a whole, since the Institute would represent a million or more workers, some 6,000 companies, and an annual production reaching a value of over three billion dollars.

6. Gradually, the closer identification of an individual with all the branches of his industry would develop in him a more flexible mind which in turn would make him more alert and intelligent in changing the character of his product as opportunity and demand offered.

7. Last, and in this case least, the industry would get a lot more return for its associational expenditures, since much of the duplication of staffs, headquarters, and activities would be eliminated.

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If and when the industry wants to give this idea some real thought, a method to that end might be the appointment of one or two representatives of each association to a central committee where the whole matter could be discussed. Meanwhile, we hope individuals will think about it—and let us have their views.

We believe its advantages make its ultimate adoption inevitable.

Eventually—why not now?

PROFIT CHANCES FADE

WE URGE our readers to pay particular attention to the facts brought out in this month's TEXTILE WORLD *Analyst* (page 85). It is shown that textile production has not fallen off to the extent generally believed, but that chances for a profit, in the cotton division at least, have faded away. The comments of Ralph E. Loper, at both the Institute and North Carolina meetings, offer eloquent testimony to this effect. . . . We do not regard the situation as a surprising one. An industry can hardly be expected to partake of such rich fare as has been the lot of textile manufacturers during recent months, without showing some signs of stomach-ache. Paolino Gerli calls this the "digestive period" in silk goods; the term applies to the other branches, too. . . . Two lines of action are essential if temporary indigestion is not to become chronic dyspepsia. One is the type of move recommended by the Cotton Textile Industry Committee and approved by General Johnson: further arbitrary curtailment of production for at least a month. The other is restoration of calmness on prices. For a while, textile manufacturers gave indications of being new men on the subject of price; lately, however, they have been getting the jitters again. There is nothing to get jittery about. Personally, we think the textile industry is in better shape right now than it has been for years. It strikes us as rather a peculiar time for a short position.

AGAINST DESIGN PIRACY

THE major emphasis placed, quite rightly, upon the wages and hours provisions of the codes tends to subordinate some very vital supplementary benefits. One of these is the new defense provided against design piracy. It is our impression that the silk textile code and the rayon and silk dyeing and printing codes, through their clauses insisting upon registration of designs, have represented a leap of progress in a struggle where the pace forward had previously been discouragingly slow.

FROM SECRETARY ROPER

Mr. Douglas G. Woolf,
Editor, TEXTILE WORLD,
Dear Mr. Woolf:

I have read with a great deal of interest the editorial which accompanied your letter of November 16, and heartily commend the fine spirit of optimism and enthusiasm which you have written into this editorial. ["It Is Now Industry's Job"—TEXTILE WORLD, November, 1933.]

To me, one of the most inspiring results of the great recovery program is the determination and vision with which industries have cooperated with the Government in working out a plan of self-government for the relief of their particular problems and those of the nation as a whole. I do not need to tell you that the textile industry has been a leader in this movement.

I was also very much interested in your comment on the opposite side of the editorial page regarding our Business Advisory and Planning Council. Anyone who regards this group as "just another committee" would have been persuaded to change their opinion had they been present at the last general meeting of the Council which was held in Washington on Nov. 1, and attended by 41 members of this group. Among these men were some of the outstanding business leaders of the country, who willingly gave their valuable time to come to Washington and discuss frankly our economic problems and the future work of the Council. This willingness to cooperate with the administration in the work of recovery, and in the development of a sounder foundation upon which we can reconstruct some of the major elements in our economic structure, seems to me the best assurance that success will attend the joint efforts of government and business to restore prosperity.

Sincerely yours,

DANIEL C. ROPER,
Secretary of Commerce.

Russian Trade . . .

COTTON GOODS MEN TO ORGANIZE FOR SHARE IN POTENTIALLY GREAT MARKET

RECOGNITION of the Union of Socialist Soviet Republics opens a great potential market to the American textile industry. Despite its industrial growth of the last few years, Russia has yet a long way to go to supply the reasonable fabric requirements of its 160,000,000 population. It is, therefore, an export market of the first magnitude, although seriously limited by its ability to pay.

To meet this opportunity, plans are now on foot under the wing of the Association of Cotton Textile Merchants to coordinate the cotton textile industry for the Russian trade. Allocation of business among the group of cooperating mills is part of the plan. Magruder Dent, of Joshua L. Baily & Co., president of the association, and Howard Coffin, chairman of the board of Southeastern Cottons, Inc., are leaders in this movement.

So far as cottons are concerned it is reported that Russia's finishing facilities considerably exceed her gray goods capacity. It would be logical, therefore, that her first interest will be in acquiring more gray goods. It is further reported that Russia's weaving equipment, put in as part of the 5-year plan, comprises all wide looms. The primary need then focuses on narrow goods, of which authorities estimate Russia can use 100,000,000 yards monthly.

Much of the rayon fabric absorbing power of Russia can be tapped through the cotton goods organization. Silk and wool goods also have a place in this field and both individual and associational activity will doubtless be undertaken. Wool goods are an essential of wearing apparel in the more northern parts of Russia for much of the year, and it is believed a large additional yardage could be consumed. Silks will probably not be sought in volume until some of the more immediate needs in lower-priced fabrics have been met. Knit goods in their various forms are potentially large sellers, as it is understood that Russia's knitting industry is less developed proportionately than the other textile branches. American apparel, particularly work clothing, should fit well in this field.

As a matter of fact, all sorts of textiles should be salable, depending only on the inclination of the Russian buying organization and the possibility of arranging credits. Samuel C. Lamport of Lamport Mfg. Supply Co., who visited Russia last summer and returned from Europe in October on the ship which brought Commissar Litvinov to this country, stated emphatically that there was a market there for any and all American textiles. He added, "If you had seen as I did in various Russian towns, hundreds of people standing in line for hours to purchase two meters of cloth, you would appreciate the extent of this market."

Mr. Lamport holds that barter is the most promising approach to the problem of working out practical details of Russian trade. The United States must buy goods from Russia, if Russia is to buy our products. If these trading arrangements are made simultaneously, matters of currency, credits, etc., fall into a place of less importance. To make this barter effective some central organization in this country seems necessary in order to deal as a unit with the Soviet, since Russia's buying and selling is organized.

Another proposal is heard in cotton goods circles to the effect that Russia can pay for goods only in notes to mature in three years, and that a governmental organization must be enlisted to discount these notes for the American sellers.

Purchases for the Russian market will continue to be handled for the time being through the Amtorg Trading Co. in New York, but ultimately the Soviet will supersede that private trading company with a trading delegation, or *Torgpredstvo*, as has been done in other countries having regular diplomatic relations with the Soviet. This trading delegation has a status in most countries similar to a commercial attaché, with diplomatic privileges.

Meanwhile, however, a flood of Russian experts "close to the crowd in Moscow" are sure to rise up. J. Anthony Marcus, Russian authority of the AAA in Washington, lays down a code of procedure for American firms which are thinking of getting in on the Russian market. Here are his rules:

"Beware of the man with the inside track; there is no such animal.

"No high pressure salesmanship, no graft payments, no entertainment allowance.

"Three things will sell goods in Russia—merit, price, credit terms.

"Salesmanship will consist in getting the Russian officials to specify your stuff. It will be worthwhile to send salesmen for this purpose, but the goods will be inspected, and bought, in the United States.

"Be sure the salesman is the right type, knows Russia, its language, and the industrial, financial, economic and political structure of the Soviet."

Mr. Lamport stressed an idea similar to this last in saying that we must study the methods, manners and psychology of our foreign customers, that we must act carefully and intelligently if the full scope of the present opportunity is to be realized; that coming at this time of need it is an opportunity the textile industry cannot afford to let slip.

From various quarters, however, come warnings that Russian textile trade, even if developed, is unlikely to be permanent. The country is committed to the development of a great industrial empire. Russia should therefore be more anxious for American machinery and raw materials than for consumer goods, as her aim will be to turn out all her own textile requirements just as soon as possible. In line with this come reports from New England of a great increase in inquiry for second-hand textile machinery, especially in complete units of 70,000 to 250,000 spindles, ranging from bale openers through weaving to finishing machinery. These inquiries are said to be tied up with Russian business, but they may only be efforts on the part of speculators to locate available lots in anticipation.

What Russian textile purchases before the war amounted to is only of academic interest, since conditions in that country have greatly changed in the 20-year interim. It is interesting, however, to note that figures just compiled by the Textile Division of the Deparment of Commerce from records for the years 1909 to 1913, inclusive, show dominance of raw materials. Average annual exportation of raw cotton to Russia in that 5-year period was 83,179 bales, valued at $5,125,570. The cotton cloth item was small, averaging 39,385 yd., valued at $5,386 annually. All wool manufactures together, including rags, did not average over $3,000 annually. Binder twine (for agricultural purposes) averaged 17,042,944 lb., valued at $1,313,965 annually.

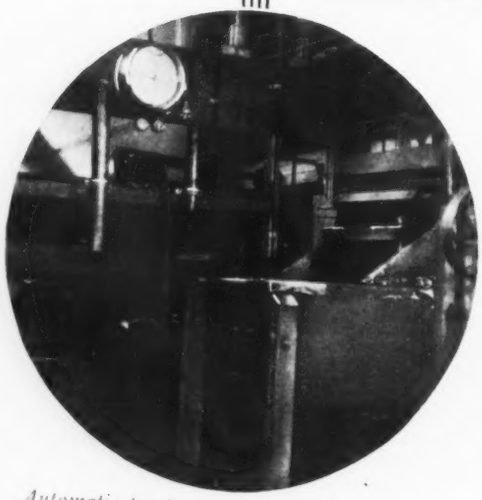
The New York Cotton Exchange states that Russia has lately been consuming about 2,000,000 bales of cotton annually and growing about 1,900,000. The same authority places the latter figure as about the present limit of Russian cotton growing, and argues that expansion must be satisfied by imported cotton, probably American. During the last five years Russian per capita cotton consumption was 5.6 lb., against about 25 lb. in the United States. Consumption figures on the other fibers are not available, but on wool, silk and rayon they are doubtless even lower in proportion to the American standard. Flax consumption alone may be higher. Russia's aspiration to raise her standard of living holds the best hope that she will make every effort to meet America more than half way in building up trade during the next few years. The textile industry will share in proportion to the intelligent work its leaders perform in approaching this new situation.

Woolen Mill Kept Modern

By Francis A. Westbrook, M.E.
Consulting Engineer

KEZAR FALLS POLICY CALLS FOR CONSTANT IMPROVEMENT

THE Kezar Falls Woolen Co., Kezar Falls, Me., was established at its present site on the Ossipee River in 1880. The plant has kept in continuous operation throughout the depression, and at the present time the spinning and weaving departments run at night. William A. Garner, the treasurer and general manager, says that the mill has had some good luck; but it would be much more accurate to call it good management. The success of this company in beating the depression, which is substantially what has been accomplished, has been actually due to hard work and a broad, forward-looking policy by means of which good outlets have been established and maintained and the mill kept modern and efficient.



Automatic temperature control on dye tub

As regards outlets for its goods, the company has a New York commission house, C. M. DeLand, through which it has done business for years. The two have cooperated very effectively. The product of the mill is of first-grade quality, much of it manufactured under copyrighted names, such as, for example, "Dromedary." The commission house keeps the company informed of style trends, and every effort is made to cater to current demands. In addition to this the company has provided silk labels which the clothing manufacturers can sew on goods manufactured of Kezar Falls materials; and this has helped to build up a demand for the products. One of the patented weaves, the "Tally-ho," is owned jointly with the North Berwick Co., North Berwick, Me.; and these two companies cooperate in stimulating the demand for this material. They have met with a large and gratifying measure of success.

While the public appreciation and demand for the goods of this company have been built up and maintained with marked success, it has not been possible to do this entirely by means of good merchandising. Ever since the depression got well under way, this manufacturer, in common with other manufacturers in all lines of industry, has been confronted with the falling-price situation. Of course the only way in which this could be met was by economical production, which is merely another way of saying "by means of a modern plant." From this standpoint the mill is very interesting.

Keeping up to date mechanically without being extravagant and without getting overloaded with debt seems to call for a certain kind of management which is none too common. Too many mills wait until all their machinery becomes so old that efficient production according to modern standards is impossible. Then they are faced with a sudden need for complete replacement, which is often financially out of the question.

On the other hand, there are some mills which continually replace machines with ones of up-to-date design as they come on the market. With this policy, they find it possible to carry on a progressive rehabilitation which calls for a comparatively small outlay at any one time, but which keeps the mill from going to seed. Many such replacements can, of course, be made during slack periods or seasons and so interfere very little with orderly operation. This seems to be the policy which has been followed at Kezar Falls.

The spinning equipment embodies both mules and ring frames. The latter consist of two Davis & Furber 200-spindle machines for warp, each driven by an individual 15-hp. textile motor. Their installation was too recent for their contribution to the efficiency of the mill to be measured accurately at the present time, but much is expected of them. They are now located in a room separate from the mule room but will shortly be moved into the latter in order that all the spinning equipment will be concentrated and efficient supervision and handling of materials facilitated. Six of the twelve Davis & Furber mules are new and of the 360-spindle type. The mules are group driven—a 25-hp. motor for four of the new machines, for example, having been found a suitable arrangement.

The picker house, which is a modern concrete building, contains a new D. & F. fearnaught picker equipped with spray oiling system and a condenser made in the company's shop. This machinery and a Sturtevant blower for conveying the stock are driven by a 30-hp. motor. In this department one 25-hp. motor drives both a rag picker and a cone duster, which are not operated simultaneously.

The picked wool is delivered to the carding department by a new Knowlton & Newton blower system embodying

a condenser and distributor. In the card room the wool is stored in five sheet-metal bins. Two of the eight sets of D. & F. cards are of the latest type and equipped with individual drives; that is, a 3-hp. motor on the first breaker and a 7½-hp. motor on the second breaker and finisher, both driving through chains. Push-button controls are located on convenient posts. One of the new card sets is equipped with broad-band intermediate feed, but the other has Apperly feed, as do the old sets. All cards are 60x60, except one, which is 48x60. Tape condensers are employed. Four of the six old sets are driven in groups of two by 15-hp. motors. The remaining group is driven with some other machinery by a 25-hp. motor.

The warp-dressing department is on the second floor of a new fireproof addition built last year. Two of the three dressers are new and have been equipped with Reeves variable-speed transmissions, which permit the operators to "baby along" tender yarns, such as French-spun single yarns. Each variable-speed unit is mounted on the ceiling; and a wooden control arm, as shown in the photograph, extends downward at one side of the dresser. To the lower end of the arm is attached a rope which runs around the machine on pulleys and is, therefore, always within easy reach of the operator, no matter on which side of the machine he may be standing or what his position may be. The older dresser is also shortly to be equipped with variable-speed transmission. The eight spoolers and three dressers require one 5-hp. motor.

Sixteen of the company's 60 Crompton & Knowles looms are the latest 92-in. heavy fancy worsted type, with four boxes and driven by individual motors and chains. They are running with 25 harnesses at 112 picks per minute. The 44 older looms are driven through shafting and belts direct from the water wheel, although a 40-hp. motor has been installed as a standby in case of low water.

New machines in the finishing department include a Rodney Hunt washer, a Hunter dryer, and a Hunter baker and dryer. A Powers thermostatically controlled water heater on the new washer supplants the steam jet on the replaced wooden tub. Four dye tubs have been equipped with Foxboro automatic temperature control. The drying equipment is located on the lower floor of the new addition.

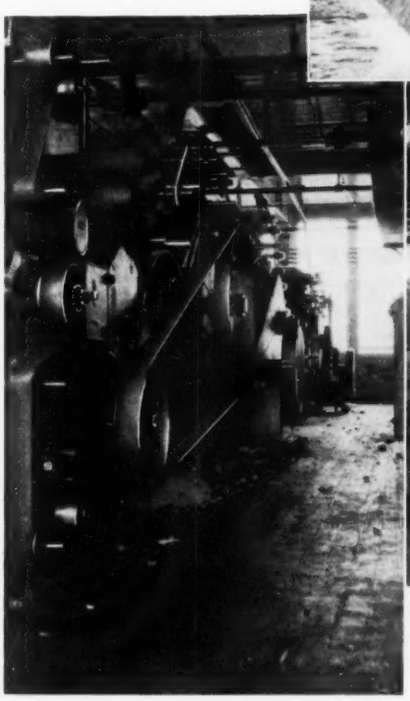
In the way of auxiliary equipment, the lighting of the plant was revamped about two years ago by the replacement of a maze of drop cords and open wiring with 14-in. reflectors on 8-ft. corners in most cases and located 7½ ft. above the floor. Some lamps are 100-watt, but most are 75. In the weave room the lighting layout provides two lamps in front and two in back of each loom.

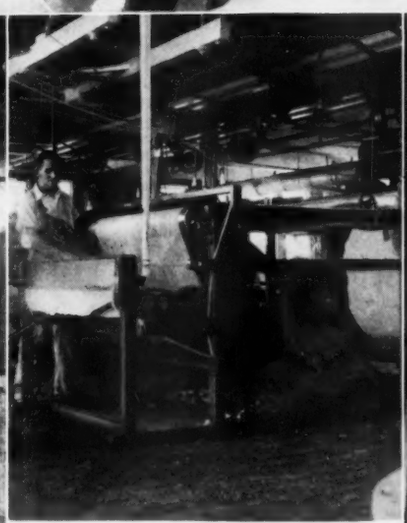
Roller-bearing hangers for the shafting have been installed throughout the plant at a saving in power of from 15 to 20%. A Grinnell sprinkler system has been installed. Last year a new concrete dam and canal with concrete sides and new water-control gates were constructed, the canal leading to the 200-hp. water wheel.

Although the recent marked progress in machinery improvement and the great need for cost reductions have induced Kezar Falls to increase the amount of modernization undertaken in recent years, considerable work of this character is carried out every year, regardless of conditions. The present efficiency of the plant attests the soundness of this policy.

Individual drive on card at Kezar Falls

Drying equipment in new concrete addition





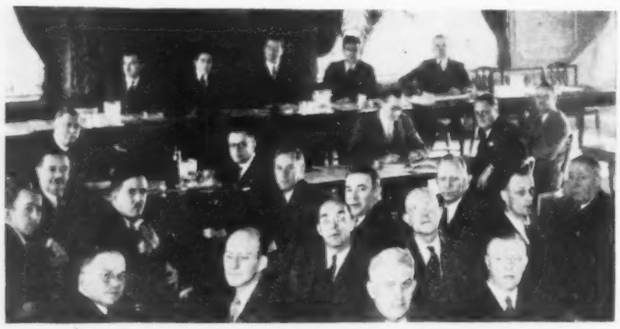
Center—Warp dresser, Kezar Falls

Center—Warp dresser, variable-speed transmission

Code Authorities

CONCENTRATE ON APPLICATION TO THEIR INDUSTRIES

WHILE the NRA struggled last month with hearings on codes for industries covering such props of life as paper disc milk bottle caps, Venetian blinds, Great Lakes shipping, goldfish, shoe and leather finish polish, light sewing, et al., most of the branches of the textile industry, through their code authorities, concentrated on the less colorful but equally difficult tasks of perfecting and applying their approved codes. Those



Glimpse of Processors Hearing at Washington, W. S. Nicholson, deputy administrator, presiding

divisions which had still not received Presidential sanction were rapidly approaching that state of grace.

Meanwhile, Washington continues to supply the press with plenty of news. Not the least interesting, to the man in the street, was the announcement by General Hugh S. Johnson that Dec. 12 had been set as the date for hearing complaints about profiteering and upping of prices under Blue Eagle and NRA codes. Later, this was postponed to Jan. 9, "because no properly authenticated evidence of unwarranted price increases had been filed." Division Administrator A. D. Whiteside was drafted to handle this matter. Our Washington correspondent opines: "Many think Colonel Howe and the General have stirred up another Blue Eagle handful. But it ought to be interesting."

The month's major developments in textile code-making are summarized below:

COTTON

Proposed additions to the cotton textile code to cover yarn merchandising practices were considered at meetings of carded yarn manufacturers and distributors held at Charlotte, N. C., and Philadelphia. These provisions are summarized in the Cotton Digest section of this issue.

Cotton converters, as represented by the Textile Fabrics Association, decided not to submit a separate code but to operate under the cotton textile code. At a hearing Nov. 23, they submitted supplementary provisions to that code. All concerned were given until Dec. 4 to file briefs expressing views on this proposed supplementary code.

PROCESSING

One of the most difficult textile jobs concluded by the NRA was the elimination of the many complications involved in the bleaching, dyeing, finishing and other processing industries. The lines of jurisdiction of the major organizations concerned, have been marked out.

Modification of Cotton Code: By executive order, Nov. 8, the President modified the cotton textile code to include the cotton thread industry, the yarn mercerizing industry, and the cotton and yarn finishing industry, as represented, respectively, by the Thread Institute, the Mercerizers Association of America, and the National Association of Finishers of Textile Fabrics. The definition of the term "Cotton Textile Industry" in Section I of the code was expanded as follows (the section in italics represents the addition):

The term "Cotton Textile Industry" as used herein is defined to mean (1) the manufacture of cotton yarns and/or cotton woven fabrics, whether as a final process or as a part of a larger or further process, and/or (2) the manufacture of woven rayon fabrics, 18" or more in width, the warp of which is primarily rayon or other synthetic fiber yarn, whether finished or unfinished, *and/or (3) the finishing of any of the foregoing fabrics, whether woven of cotton or rayon or other synthetic fiber or of a mixture of any of these fibers with any other fibers, provided that such finishing operations are carried on by (a) concerns engaged in the weaving of cotton and/or rayon or other synthetic fiber, (b) concerns engaged solely in finishing cotton woven fabrics, (c) concerns primarily equipped for and primarily engaged in finishing cotton woven fabrics who may also be engaged in finishing rayon and/or other synthetic fiber fabrics and/or (4) the manufacture of sewing, crochet, embroidery, and/or daruing cotton thread.*

The maximum hours and minimum wages of the three industries applying for admission under the provisions of the cotton extile code are the same as those in the code itself, with the following exception: The cotton and rayon finishers provide for a dollar a week higher minimum wage.

Machine hours for productive machinery are restricted to two shifts of 40 hours each in all three branches of industry coming under the provisions of the code, with the exception of the so-called mill finishers. For this group it is provided that the operating of finishing machinery, except printing machinery, for a sufficient number of hours to finish the fabrics woven on their own looms only, or cotton thread made on their own machinery only, shall not be deemed a violation of the code until any such finishing operation exceeding two shifts of 40 hours each be determined to be an unfair competitive practice.

Rayon and Silk Dyeing and Printing Industry: Hearing on the code for this industry, as submitted by the Institute of Dyers and Printers, was held Nov. 10.

The proposed jurisdiction of the code is indicated by the following definition contained therein:

The term "industry" as used herein shall include the dyeing, finishing, bleaching, mercerizing, weighting, printing or other processing of rayon, silk, or of any mixture of the same, or of any mixture of goods containing silk, or rayon, with cotton or wool, either in the piece or in the yarn, in the United States, but shall not include concerns primarily equipped for, and primarily engaged in, finishing cotton woven fabrics who may also be engaged in finishing rayon and/or other synthetic fiber fabrics, and shall not include concerns, not members of the Institute, who may be engaged in the dyeing, finishing, bleaching, mercerizing, or other processing of rayon and/or other synthetic fibers in the yarn.

The code proposed a 40-hour week and a minimum wage of 45c. per hour for male employees and 35c. per hour for female employees.

Textile Processing Industry: Hearing on the code for this industry, submitted by the National Textile Processors Guild, was held Nov. 15. The proposed jurisdiction of the code is indicated by the following definition contained therein:

The term "industry" means and includes the business of commission scouring, bleaching, dyeing, and glazing of raw stock, tops and yarns of cotton, wool and rayon and/or other synthetic fibers and/or combinations thereof which may be spun into yarn (except silk and spun silk yarn) and woolen and worsted fabrics including the application of such processes to hosiery, and other knitted textiles.

The code proposed a 40-hour week and a minimum wage of 32½c. per hour for cotton and rayon yarn processing, and of 35c. per hour for all other processing, with the proviso that, for employees in the South, the minimum wage may be lower than the above but not to exceed 2½c. per hour.

MISCELLANEOUS

The code for the upholstery and drapery textile industry was approved, effective Dec. 11, providing a 40-hr. week with minimum wages of 32½c. an hr. in North, 30c. in South.

The code for the wool felt manufacturing industry was approved, effective Dec. 11, providing a 40-hr. week with minimum wage of 35c. an hour.

The code for the hair and jute felt industry was approved by the President to become effective Nov. 13. It provides a 40-hr. week with minimum wage of 35c. per hour.

The code for the Nottingham lace curtain industry was approved by the President to become effective Nov. 13. It provides a 40-hr. week and a minimum wage of $13 per week.

Kirstein vs. Jordan

BOUT ON NRA ENDS IN KNOCKOUT VICTORY FOR FORMER

"IN THIS corner, Dr. Virgil Jordan—economist—president of the National Industrial Conference Board. In that corner, Lewis E. Kirstein—businessman—vice-president of William Filene's Sons Co. Bout to go two rounds; no decision to be rendered."

But the audience gave its own decision—and Mr. Kirstein won by a knock-out.

That's about the story of the industrial group session of the Ninth New England Conference held at Boston Nov. 24. It developed—undoubtedly unintentionally—into a Kirstein-Jordan contest over the NRA—with the former taking the pro side, and the latter the anti. Seldom, if ever, at a business meeting have we witnessed a more spontaneous and decisive tribute than the applause given Mr. Kirstein when he finally stopped mauling his opponent. It lasted minutes, instead of seconds—rather like the "ovations" a political party indulges in at its nominating conventions. And it was real—because Dr. Jordan's tactics had swayed the audience considerably, and Mr. Kirstein had to counteract that first.

A SPEAKER who announces that he is confining himself to facts and eliminating opinion, has a tremendous responsibility toward his audience. He must not only so confine himself, but must present his facts in a manner free from bias.

Dr. Virgil Jordan, president of the National Industrial Conference Board, did not discharge that responsibility toward his hearers at the industial group session of the New England Conference last month. Not only were many of his "facts" of extremely limited value and import, but his manner of presenting them was far from impartial. An address is not a factual one when it is spotted with such statements as "industry being subjected to academic vivisection"—"New England business becoming philanthropic"—"vicious fallacy"—and similar phrases, *all on the anti-NRA side.*

Our purpose in laying emphasis upon this relatively unimportant incident in our national life is that Dr. Jordan's attitude was unfortunately typical of that of many present-day critics of the recovery program. They seem far more anxious to get applause for a smart phrase or a negative wise-crack than to recognize a step forward in the fight against despair. When they occupy high position, as does Dr. Jordan, their responsibility is all the greater.

Consequently, we got quite a kick out of the forensic drubbing which a hard-headed businessman like Lewis E. Kirstein handed out to Dr. Jordan. It was one of the prettiest performances we have ever seen.

Of course, we imagine that Dr. Jordan brushed the incident from his memory with the self-consoling thought that he had the courage to face facts while his opponent let himself be swayed by emotion. He is entitled to whatever consolation he can get out of that. . . . The audience apparently decided otherwise. But then, too, Mr. Kirstein might have packed the meeting with emotionalists!—*Editor.*

Dr. Jordan's part in the performance was to present the results of a joint New England Council-Conference Board inquiry into the effects of the NIRA upon New England industry—the comparison being between the status in June before the act went into effect, and a stated date in October. The outstanding findings were that the industries reporting showed for factory workers a 20% increase in employment, a 27% increase in payrolls, a 1% increase in computed man-hours, a 16% decrease in average weekly hours per worker, a 6% increase in average weekly earnings per worker, and a 26% increase in average hourly earnings. Although the success of the NIRA in thus increasing employment and wages was indicated, the report said the returns on production, sales and inventories were less favorable. While a 10% increase in production was shown, there was also a 10% increase in inventory, while sales showed only one-tenth of 1% increase.

Dr. Jordan's main deduction was that, although the operation of the act had brought a definite improvement temporarily in some groups of labor, the permanence of the betterment was extremely doubtful, since there had been no corresponding improvement in profit possibilities. These few facts seem harmless enough—but Dr. Jordan left no doubt as what he himself thought of the whole business.

Mr. Kirstein, who is chairman of the Industrial Advisory Board of the NRA, a member of its National Labor Board, and a member of the Retail Code Authority, accepted the challenge. He first suggested it was a little early to consider statistics as to the effects of the act, when it was signed as recently as June 16, and most of the codes were very young! Later in his address, he hit harder:

"Yes, I know that President Virgil Jordan told the National Founders Association a few days ago that instead of the NRA being responsible for improvement it had retarded the normal processes of business recovery which were well under way in all other countries and had begun to show effects here. I wonder how many believe that? Do you recall any evidence of the impending return of prosperity that was manifest before the President's recovery program was begun? Do you think many of us would have put more people to work in our shops and factories if the NRA codes or the President's re-employment agreement had not compelled it?"

Later, he landed still another direct blow:

"Let me quote another paragraph from Dr. Jordan's speech. He said: 'The Administration should reorganize the National Labor Board so as to make the representation of employers upon it more adequate and effective, etc.'

"Do you know how the employing group is represented on that board? There is Walter Teagle of the Standard Oil Co. of N. J., Gerard Swope of the General Electric Co., the late Edward N. Hurley of the various Hurley enterprises, T. Austin Finch, president of the Southern Manufacturers Assn. and one of the receivers of the Insull properties, and Kirstein. I think that ought to be considered a fair representation of employers."

Mr. Kirstein's address was the most positive and most informative exposition of NRA aims and accomplishments that this writer has ever heard. It gained additional weight by the character of the speaker: a businessman talking to businessmen.

Here is a sample of his method:

"Much of the criticism from people in our own group consists of loud-sounding horror that the Government should undertake to tell merchants and manufacturers how to run their business. Gentlemen, that is plain tommy-rot. Any business that is interfered with by the Government under the codes will be a business that needs watching."

His final plea brought 'em out of their seats:

"One thing none of us wants. We do not want to go back to the days of ruthless competition, to planless drifting. We know that only by working together can we bring our country out of the economic morass into which it has fallen. Let us stop carping, negative, and small-minded criticism. Let us rather cooperate in the further development of what has been a magnificent beginning to the end that this great country, and all its inhabitants, may realize its unlimited potentialities for the good life for all."

Fair Trade Practice

PROVISIONS PROPOSED FOR WOOL CODE

THE long-expected fair trade practice provisions of the wool textile code were announced last month and formed the subject of a hearing in Washington, Dec. 8, before Deputy Administrator H. B. Ludlum. On the previous day, the National Association of Wool Manufacturers met and discussed these provisions in New York.

At that meeting the industry's Code Authority was selected to be composed as follows: H. M. Ashby, Kenwood Mills; Millard D. Brown, Continental Mills; Lewis A. Hird, Samuel Hird & Sons; Moses Pendleton, American Woolen Co.; Ames Stevens, M. T. Stevens & Sons Co.; Arthur Besse, president of association, ex-officio. The following are alternates: A. L. Green, Farr Alpaca Co.; Richard Lennihan, Hamilton Woolen Co.; F. W. Tipper, Deering, Milliken & Co. H. B. Ludlum, Jr., has been appointed by Divisional Administrator Whiteside as NRA representative on the Code Authority.

President Besse conducted the New York meeting with skill and the code additions were unanimously approved after minor amendments. Mr. Besse was empowered to appoint committees to consider national promotion of wool goods and to study plans for ratable sharing of business as provided in the petroleum and lumber codes. It was also voted to recommend that the stay given to woolen spindles as exempt from the hours limitations should not apply to yarns made for sale.

Divisional meetings appointed Sub-code Authorities and approved details under Art. XIII of unfair trade practices, the divisions including piece goods sales, spinners, combers, and blanket mills.

The proposed new articles follow:

ARTICLE XII: *Administration.*

SECTION 1. *Designation of Divisions of Industry:* Every person engaged in the wool textile industry, who manufactures or sells any product or engages in any activity as listed in Schedule 1 under a designated Division of the Industry shall, as to each product or activity, operate under the rules formulated for the Division into which that product or activity falls, and shall be a member of that Division. The Board of Directors of the National Association of Wool Manufacturers may, from time to time, amend Schedule 1 to consolidate Divisions, create new Divisions, subdivide old Divisions, or add new products or activities to old Divisions to the extent that changes in circumstances require such amendment. Any such amendment shall be subject to appeal to the Code Authority by any interested persons, and shall in no event be retroactive.

SECTION 2. *Organization and Constitution of Code Authority and Sub-Code Authorities:*

(a) In accordance with the Executive Order of July 26, 1933, a Wool Textile Industry Committee (hereinafter called the "Code Authority"), is hereby constituted to cooperate with the Administrator in the administration of this Code. The Code Authority shall consist of six members nominated by the Board of Directors of the National Association of Wool Manufacturers for such term or terms as the Board may specify and elected or approved by a method, satisfactory to the Administrator and such additional members, if any, not exceeding three, as may be appointed by the President. Such additional members shall not be vested with voting rights and shall serve without expense to members of the industry. Upon the appointment of six members by the Association, as provided above, the Code Authority shall be duly constituted, and shall function as herein set forth, whether or not the President will have availed himself of the right to appoint additional members.

(b) The Code Authority shall adopt its own rules and/or methods of procedure and may appoint such officers or agencies as it may deem necessary properly to administer this Code. It may delegate to a special Sub-Code Authority of any Division of the Industry listed in Schedule 1 the administration of all articles of this Code or supplementary codes relating to trade practices of that Division. The Sub-Code Authority for each Division of the industry shall consist of not less than three members of that Division elected by majority vote of the members of such Division and to serve for such periods as the Division may determine.

(c) The members of each Division or Sub-Division may adopt their own rules and/or methods of procedure, not inconsistent with the Act or with the Code or with the By-Laws of the National Association of Wool Manufacturers, and may adopt rules of practice or of merchandising relating to uniform terms, standard sales contracts, sales below cost, the filing of prices, competitive practices, etc., for their Division or Sub-Division, amplifying for that Division or Sub-Division the provisions of Article XIII hereof in order to promote fair competition. Subject to the veto of the Administrator such rules of procedure and such merchandising rules, when approved by three-fourths vote of the members of the Division or Sub-Division affected, by the Sub-Code Authority of that Division, and by the Code Authority, shall be binding upon all members of that Division. Changes may be made in any such rules in the same manner in which the original rules are adopted.

(d) For the purposes of this section, the three-quarter vote may be either: (1) three-quarters of those voting at a meeting of members of the Division or Sub-Division duly called for consideration of the rules; or (2) three-quarters of those voting on mailed ballots sent to addresses of the members of the Division or Sub-Division at least ten days prior to the day on which such ballots are to be counted. No action by ballots shall be binding unless affirmative ballots are received from at least one-third of those to whom ballots are sent.

SECTION 3. *Appeals:*

(a) Any interested party shall have the right of complaint to the Code Authority or the Sub-Code Authority, and a prompt hearing and decision thereon, under the rules of procedure of such body, in respect to the fairness of any rule of practice or merchandising adopted for a Division or Sub-Division of which he is a member.

(b) Any interested party shall have the right of appeal to the Administrator, under such rules and regulations as the Administrator shall prescribe in respect to any decision, regulation or order made by the Code Authority or Sub-Code Authority under the foregoing paragraph.

ARTICLE XIII: *Unfair Trade Practices.*

For the purposes of the Code, the following shall constitute unfair trade practices forbidden to members of all Divisions:

1. Selling at terms different from those prescribed by the rules of the Division or Sub-Division, or granting to any customer secret rebates, subsidies, commissions, or advertising credits.
2. Granting options (except in connection with government contracts), or reservations, or selling "at value," or guaranteeing prices against either advances or declines.
3. Shipping goods on consignment, except as may be provided for in a Division or Sub-Division merchandising plan.
4. Improperly marking perfect goods as "seconds" or otherwise.
5. Publishing or distributing any advertising which is misleading or inaccurate in any material particular, or in any way misrepresenting any goods or values, policies, services or the nature or form of the business conducted.
6. Manufacturing or selling any article in imitation of a competitor's product, package, trade-mark or trade name, or selling from a competitor's samples.
7. Failing to print on copy of contract or order the standard sales contract provisions required by Division or Sub-Division rules.
8. Performance of commission work by any employer as an incidental function outside his regular recognized activities, without complying with the merchandising plan in force for the Division or Sub-Division covering such commission work.

ARTICLE XIV: *Arbitration.* (In part.)

1. The Sub-Code Authority of each Division of the Industry is directed to appoint a Panel consisting of as many persons as it deems proper (not limited to members of the Division), to be known as the Panel on Trade Disputes and Unfair Practices of the Division.
2. The Panel shall have jurisdiction to hear and determine, on the complaint of any interested person, any dispute or controversy relating to a violation of any trade practice provision of this Code, which may affect that Division, or to a violation of the rules of practice or merchandising for that Division.

ARTICLE XV: *General.*

1. The employment of any subterfuge to circumvent this Code shall be regarded as a clear violation thereof.
2. By presenting this Code the members of the industry assenting thereto do not thereby consent to any modifications thereof and they reserve the right to object individually or jointly to any such modifications.
3. Where the rules of practice or merchandising for any Division require or permit the filing of prices and/or samples, such price files and/or sample files shall not be available for inspection by members of the Division, but members of the Division will be entitled to ask at reasonable times for such information as the rules specify as proper, which information shall be furnished by those in charge of the files.

SCHEDULE I

For the purposes of Article XII, the following groups of persons engaged in the Wool Textile Industry shall constitute the respective divisions of the Industry. Such divisions may be subdivided, combined, or realigned from time to time by the Board of Directors of the National Association of Wool Mfrs.

I. Worsted Men's wear.
II. Worsted Women's wear.
III. Carded Men's wear.
IV. Carded Women's wear.
V. Blankets.
VI. Cotton Warps.
VII. Knit Fabrics.
VIII. Worsted Spinners (sales yarn) Bradford System.
IX. Worsted Spinners (sales yarn) French System.
X. Carded Spinners (sales yarn).
XI. Combers.
XII. Wool scourers and carbonizers.
XIII. Piece Goods Sales.
XIV. Reworked Wool.
XV. Topmakers.

For the purpose of the "Rules of Practice and Merchandising for the Piece Goods Selling Division," this Division shall be composed of active members of Sections I, II, III, IV, VI and VII. Each member of said division shall vote either individually or through a duly appointed representative.

FASHION SUBDUES MAE WEST BUT HAILS "GLAMOR" IN TEXTILES

THE age of glamor in textiles is upon us. After nearly a generation of more or less austere simplicity, which influenced fabric constructions and designs no less than it dominated apparel and house furnishing styles, the pendulum has swung decidedly toward the gay and the glittering. Velvets are highlighted, metallic fabrics are highlighted—everything indeed which bespeaks luxury and lavishness, finds strong support among fashion's mentors.

Behind this style revolution is a dramatic story indicative of the various forces which contribute to fashion changes. The turn, so far as the public is concerned, was first signalized last spring, by no less a fashion arbiter than Mae West, who glorified the late Victorian styles in a popular film play of the nineties. Just how vital the Mae West influence has been, is a pet controversial topic in textile fashion circles. Stylists returning from Paris report variously that the French capital is "completely Westian" and that "Paris regards the Mae West influence as much exaggerated." In recent weeks, however, the picture has greatly clarified, allowing the new trend to crystallize itself. The fact of the matter is that, while Mae West undoubtedly influenced the style at its start, there is no evidence that a "Diamond Lil" fashion era is on us. What is happening is that the Mae West glitter is being toned down to a rich but dignified glamor, typical of the more convivial type of evening social life which the repeal of prohibition now is ushering in.

And, of course, velvet is on the crest of the wave. The terrific impetus of these influences has directly aided pile fabric sales, resulting in a strong and steady demand. Prices of the volume range of transparent velvets, which had been down to $1.15 last fall, advanced during summer to $2.07½, but later dropped to $1.80.

That the present high fashion emphasis will stimulate volume interest in velvets during 1934 is evident when one gives even the most cursory consideration to the fundamentals underlying the present boom.

Above is shown American beauty velvet embroidered with gold and jewels in key with new "glamor" (from Davidson & Gelb, New York). At left is the roaring nineties personified in Mae West as Diamond Lil.

Fashion has sounded the death-knell of simplicity in styles and has given us instead an age of elegance wherein every dress item must have a glow, if not a sparkle. Metallic fabrics are selling almost as well as velvets. Ornaments are in extravagant demand. Dining-out fashions assume a new significance, thanks to repeal, and all of these styles are taking on a champagne zest.

How are the pile fabric mills meeting this sudden change? The answer is that during the current season, velvets have taken on a new identity. The present vogue, while greatly strengthening the status of transparent velvets, has also helped toward a significant revival of the heavier all-silk velvets. Whatever may be said for the market value of Mae West and repeal in publicizing the "glamor era," there can be no question that technical improvements in velvet manufacture are contributing vitally to the present popularity of the pile fabrics.

This improvement has two main aspects both equally important—the use of special processes such as spot and water-proofing and crush-proofing, and the development of new effects through new designs and weaves. Resistance to crushing has proved an extremely important merchandising asset; indeed sales researches conducted by June Hamilton Rhodes, managing director of the Velvet Guild, have convinced her that non-crush velvets will be in outstanding demand next year.

Specialty velvets are particularly favored at present; this group includes lace effects, worked surfaces, shiny and mat stripes, chiffon-and-velvet mixed combinations, Lastex crinkle effects—to say nothing of the fur-like velvets, which are so distinctive as to come in a class by themselves—and the new sports velvets.

That this "glamor era" is decidedly more than a temporary popular reaction to a sensational film success, is evident in the fact that it is spreading through various auxiliary textile divisions. Accessories also must have glamor, fashion dictates, and velvet is highlighted for shoes, gloves, bags, etc. Home decorations also share the influence, and pile fabrics are assuming new importance in this field.

The success of velvets and other glamor fabrics during 1934 will depend largely on merchandising ability. The demand exists already, thanks to widespread publicity and heralding. It remains for the industry to capitalize on this ready-made market. The concerted avoidance of cheapening the fabric, which could so easily have ruined the whole merchandising picture this season, is a healthy omen for the coming year.

Conversion Factors UNDER PROCESSING

✦ *On this and succeeding pages are printed the conversion factors and definitions for the most important items as set up in supplementary regulations issued by the AAA to become effective Dec. 1, but not to be retroactive prior to that date. Although developed officially for the purpose of assessing additional duties on imported goods and rebating processing taxes paid on goods which have been exported, it is recognized that unofficially they can be of use in the settlement of disputes which have arisen between mills and their customers since the processing tax went into effect. They are published here for ready reference use by readers.*

Definitions

The following terms, as used in these regulations, shall have the meanings hereby assigned to them:

FIRST DOMESTIC PROCESSING:

(a) With respect to cotton that is to be spun, is every state of manufacture or processing up to the removal of the bobbin or cop from the spinning machine on which its yarn has been spun;

(b) With respect to cotton that is not to be spun is that amount and degree of manufacture or processing up to the point where the cotton is fashioned into an article, either to be packaged and sold as such, or to be used for further manufacturing into a different type of article.

ABSORBENT COTTON—Absorbent cotton is cotton treated chemically to remove natural fatty substances and further prepared for surgical purposes.

ARTIFICIAL LEATHER—Artificial leather is a stout coarse cotton fabric, spread or coated with nitro-cellulose or varnish, and grained and finished, usually to resemble leather.

AUTO SLIP COVER CLOTH—Auto slip cover cloth is a medium weight cotton fabric, plain weave, with ingrain colored warp stripes.

AWNING STRIPES—Awning stripes is a strong durable cotton canvas made in colored stripes with colored warp yarns, or having printed, stencilled and/or painted stripes. Thus classification includes ingrain solid colored awning material.

BATTING—Batting is layers of cotton, cleaned and slighted matted.

BED SPREADS—Bed spreads are cotton household articles, commonly known as counterpanes, cut and hemmed, or fringed on both ends, made from bedspread and/or woven quilt fabric.

Bed spread and quilting are cotton fabrics used for making the top covers of a bed, such as crochet quilts, Marseilles quilts, satin quilts, dimity spreads, and crinkled or raised pattern spreads.

BLANKETING—Blanketing is a napped cotton cloth having comparatively fine count warp yarns and coarse soft spun filling yarns.

BLEACHED—Bleached is a term indicating that the fibers in any state have been treated with chemicals for the purpose of whitening.

BOOKCLOTH — Bookcloth is a woven cotton fabric which has been heavily filled, and is generally glazed and embossed.

BRAIDED FABRIC—Braided fabric is a flat, round or tubular narrow fabric plaited from cotton yarns.

BROADCLOTH—Broadcloth is a cotton fabric woven with fine yarns, with warp yarns predominating.

BUCKRAM—Buckram is a coarse, plain woven, lightweight cotton fabric, with a heavy glue dressing, used as stiffening material in garments or other articles.

CANTON FLANNEL—Canton flannel is a cotton fabric, with twill face and napped back.

CARDED—Carded is a term meaning that the cotton fibers have been separated, straightened, and mixed by passing articles processed from cotton, which cotton content is found by deducting from the total weight of such articles the percentage of the total weight thereof repre-

The table fixes (1) the conversion factors, being the percentage of the per pound processing tax on cotton, with respect to each pound of the cotton content of the follow-

"C. F." at Head of Columns Stands for Conversion Factor, and "Non-C. C." for Non-Cotton Content. All figures %	CARDED						COMBED					
	Unbleached Not Colored		Unbleached Colored		Bleached (Colored or Uncolored)		Unbleached Not Colored or Mercerized		Unbleached Colored and/or Mercerized		Bleached (Colored or Uncolored; Mercerized or Unmercerized)	
	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*
Laps:												
Picker (before carding)	105	0	109	0	112	0	..	..	..	..	..	..
Ribbon and sliver	110	0	113	0	117	0	..	..	..	..	..	..
Sliver	109	0	112	0	116	0	116	0	120	0	124	0
Roving	110	0	114	0	117	0	118	0	122	0	126	0
Waste:												
Card strips	60	0	60	0	60	0	..	..	..	..	..	..
Comber waste	..	..	..	..	..	..	80	0	80	0	80	0
All other	0	..	0	..	0	..	0	..	0	..	0	..
Yarn:												
Chenille	118	0	122	0	120	..	..	..	..	..	..	..
Gassed	..	..	..	..	..	..	125	0	129	0	135	0
Novelty	113	0	116	0	..	..	123	0	127	0	..	..
Super-carded	114	0	117	0	122	0	..	..	..	..	..	..
All other	112	0	115	0	120	0	121	0	125	0	131	0
Thread, twine and cordage thread:												
Glazed	113	4.0	117	4.0	122	4.0	123	4.0	126	4.0	132	4.0
Other than glazed	113	2.0	117	2.0	122	2.0	123	2.0	126	2.0	132	2.0
Twine and cordage:												
Polished	112	10.0	115	10.0	..	..	..	..	..	..	..	..
Not polished	112	0	115	0	117	0	..	..	..	..	..	..
Woven fabrics — over 12 inches wide:												
Awning stripes:												
Ingrain and printed	..	..	116	5.0	..	..	..	..	..	..	..	..
Painted and stenciled	..	..	116	15.0	..	..	..	..	..	..	..	..
Bedspreads and quilting	118	2.0	122	2.0	129	4.0	135	1.0	139	1.0	142	1.0
Blanketing	117	2.5	120	2.5	126	0	..	..	..	..	..	..
Broadcloth	115	7.0	119	5.0	126	4.0	127	7.0	131	3.0	139	1.0
Buckram	115	55.0	119	55.0	..	..	..	..	..	..	..	..
Canton flannel	117	2.5	120	2.5	128	0.5	..	..	..	..	..	..
Chambray	..	..	117	7.5	..	..	..	..	..	..	..	..
Chenille	121	3.0	125	3.0	..	..	..	..	..	..	..	..
Corduroy	118	2.5	122	2.5	127	8.0	129	2.0	133	5.0	139	8.0
Corset cloth	..	..	..	..	..	..	127	5.0	131	4.0	137	4.0
Cottonades and trouserings	..	..	117	6.0	..	..	..	..	..	..	..	..
Crash toweling	116	2.5	..	..	122	1.0	..	..	..	..	..	..
Crepe	115	5.0	119	5.0	126	3.0	127	5.0	131	3.0	139	3.0
Crinoline	115	38.0	119	38.0	126	38.0	..	..	..	..	..	..
Damask — table	115	5.0	119	5.0	126	4.0	127	5.0	131	3.0	139	3.0
Denim	..	..	118	7.5	..	..	..	..	..	..	..	..
Diaper cloth	115	3.0	..	..	126	0	..	..	..	..	..	..
Drills and twills	116	5.5	120	5.0	123	4.0	127	5.0	131	4.5	139	4.0
Duck—enameling	116	6.5	120	4.0	..	..	..	..	..	..	..	..
Duck — flat	116	6.5	120	5.0	124	6.5	..	..	..	..	..	..
Duck — plied yarn	114	0	118	0	120	0	..	..	..	..	..	..
Express stripes or hickory stripes and pin checks	..	..	117	7.5	..	..	..	..	..	..	..	..
Flannelette	119	2.5	123	2.5	130	0.5	..	..	..	..	..	..
Frieze	..	..	133	1.0	..	..	..	..	144	1.0	..	..
Gingham	..	..	121	7.0	..	..	..	..	135	4.0	..	..
Huckaback toweling	116	3.0	..	..	126	2.0	..	..	..	..	..	..
Lawn	116	5.0	120	4.0	126	3.0	127	5.0	131	3.0	139	2.0
Marquisette or curtain scrim	..	..	..	..	..	..	127	3.0	131	3.0	139	3.0
Moleskin	117	2.5	121	2.5	124	1.0	..	..	..	..	..	..
Mosquito netting	115	8.0	119	8.0	126	8.0	..	..	..	..	..	..
Osnaburg	118	5.0	122	2.0	125	2.0	..	..	..	..	..	..
Pajama checks or mainsook checks	115	6.0	119	7.0	126	7.0	127	5.0	131	3.0	139	3.0
Pique	115	5.0	119	5.0	126	5.0	127	5.0	131	3.0	139	3.0
Plush and velour:												
Figured	..	..	139	1.0	..	..	..	..	152	1.0	..	..
Not figured	128	0	132	1.0	138	0	139	0	143	1.0	149	0
Poplin	115	5.0	119	4.0	126	5.0	127	5.0	131	2.0	139	2.0
Print cloth	115	6.5	119	6.0	122	7.0	..	..	..	..	..	..
Rep	115	5.0	119	3.0	122	2.0	127	5.0	131	2.0	139	1.0
Sateen	116	6.0	120	5.0	123	4.0	127	6.0	131	4.0	139	3.0
Seersucker	..	..	117	5.0	..	..	..	..	..	..	..	..
Sheetings—over 40 inches	115	4.0	119	3.0	126	2.0	127	4.0	131	3.0	139	2.0
Sheetings—40 inches and less	116	5.0	120	5.0	122	6.0	..	..	..	..	..	..
Shirting — madras	115	6.5	119	4.0	126	4.0	127	5.0	131	3.0	139	2.0
Tapestry	..	..	126	1.0	..	..	..	..	137	1.0	..	..
Terry pile	115	3.0	119	0	124	0	127	2.0	131	0	139	0
Ticking	..	..	117	7.5	..	..	..	..	..	..	..	..
Tire fabrics:												
Cord and weftless cord	114	0	..	..	..	..	122	0	..	..	..	..
Square woven	114	0	..	..	..	..	..	..	..	..	..	..
Tobacco and cheesecloth	115	4.0	119	2.0	126	2.0	..	..	..	..	..	..
Velveteen	118	2.5	122	2.0	127	2.0	129	2.0	133	1.0	139	1.0
Voile	115	4.0	119	2.0	126	3.0	127	2.0	131	2.0	139	2.0
All other:												
Napped	118	2.5	122	1.0	129	0	..	..	..	..	..	..
Not napped	115	5.0	118	4.0	125	3.0	127	4.0	131	3.0	139	2.0
Narrow fabrics (12 inches and under)												
Non-elastic	115	4.0	119	3.0	123	5.0	125	4.0	129	3.0	133	2.0
Elastic	115	25.0	119	25.0	123	25.0	125	25.0	129	25.0	133	25.0

TAX SET UP BY AAA

sented by the weight of sizing or buttons, rayon, silk, other textile fibers or other non-cotton content, and (2) the percentage of the total weight of said articles determined to represent, as to "rugs and mats other than cotton weft," the weight of all non-cotton content except rayon, silk and other textile fibers other than cotton.

"C. F." at Head of Columns Stands for Conversion Factor, and "Non-C. C." for Non-Cotton Content. All figures %	CARDED						COMBED					
	Unbleached Not Colored		Unbleached Colored		Bleached (Colored or Uncolored)		Unbleached Not Colored or Mercerized		Unbleached Colored and/or Mercerized		Bleached (Colored or Uncolored; Mercerized or Unmercerized)	
	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*	C.F.	Non-C.C.*
Knit fabrics	115	0	119	0.5	123	0	125	0	128	0.5	133	0
Knit articles other than hosiery:												
Bathing suits	..	..	150	3.0	..	..	..	..	..	..	..	..
Coat — sweater	125	2.0	129	2.0	134	2.0	..	..	..	..	..	..
Gloves — jersey work	..	..	143	1.0	..	..	..	..	..	..	..	..
Gloves — chamois suede	..	..	..	..	..	..	152	1.0	157	1.0	169	1.0
Pullover — sweaters and jerseys	139	0	143	0	148	0	..	..	..	..	..	..
Scarfs and mufflers	118	0	121	0	126	0	..	..	..	..	..	..
Sweat shirts	124	0	128	0	132	0	..	..	..	..	..	..
All other	128	1.0	132	1.0	137	1.0	142	1.0	146	1.0	151	1.0
Bands and wrappers — infants'	129	0	131	0	133	0	140	0	144	0	145	0
Drawers, bloomers, step-ins and pants, except infants'	129	1.0	131	1.0	133	1.0	140	1.0	144	1.0	145	1.0
Pants, infants'	138	0.5	144	0.5	149	0.5	150	0.5	155	0.5	162	0.5
Sleepers	132	2.0	136	2.0	140	2.0	143	2.0	147	2.0	152	2.0
Undershirts, athletic	138	0	144	0	149	0	150	0	155	0	162	0
Undershirts, infants'	133	0.5	135	0.5	138	0.5	145	0.5	149	0.5	150	0.5
Undershirts, other	129	1.0	131	1.0	133	1.0	140	1.0	144	1.0	145	1.0
Vests	129	0	131	0	133	0	140	0	144	0	145	0
Union suits	132	1.5	136	1.8	140	2.0	143	2.0	147	2.5	152	3.0
Waistsuits, children's	138	4.0	144	4.0	149	4.0	150	5.0	155	5.0	162	5.0
All other	133	1.0	136	1.0	139	1.0	143	1.0	147	1.0	150	1.0
Lace	120	7.0	124	7.0	132	7.0	131	7.0	135	7.0	143	7.0
Articles made from fabrics												
Bags	117	5.0	..	..	122	12.0	..	..	..	..	..	..
Bed sheets	118	4.0	..	..	129	3.0	..	..	..	..	143	2.0
Bedspreads	123	1.0	..	..	133	3.0	..	..	..	..	150	3.0
Blankets	..	..	..	..	130	2.5	..	..	..	..	..	..
Conveyor belts and machinery belts	115	0	..	..	..	..	..	..	..	..	..	..
Diapers	..	..	..	..	128	0	..	..	..	..	..	..
Gauze	..	..	..	..	126	0	..	..	..	..	..	..
Handkerchiefs	..	..	..	..	126	5.0	..	..	..	..	143	2.0
Laundry and dye nets	116	0	..	..	..	..	..	..	..	..	..	..
Mattress ticks	..	..	..	..	121	7.5	..	..	..	..	143	3.0
Napkins	..	..	..	..	129	4.0	..	..	..	..	143	3.0
Pillow cases	118	4.0	..	..	129	3.0	..	..	..	..	143	2.0
Rugs and mats —												
Chenille	121	3.0	..	..	125	3.0	..	..	..	..	..	..
Cut pile —												
Cotton weft	..	..	..	..	144	1.0	..	..	..	..	156	1.0
Not cotton weft	..	..	..	..	145	19.0	..	..	..	..	157	19.0
Frieze	..	..	..	..	133	1.0	..	..	..	..	144	1.0
Terry	119	3.0	..	..	125	0	..	..	..	..	142	0
Other than pile	122	3.0	..	..	126	1.0	132	3.0	..	..	137	1.0
Table cloths	..	..	..	..	129	4.0	..	..	..	..	143	3.0
Towels —												
Crash	119	2.5	..	..	125	1.0	..	..	..	..	..	..
Huck	..	..	..	..	129	2.0	..	..	..	..	..	..
Terry	..	..	..	..	127	0	..	..	..	..	142	0
All others —												
Not colored	118	3.0	..	..	127	4.0	135	3.0	..	..	143	2.0
Colored	..	..	..	..	125	4.0	..	..	..	..	139	2.1

Hosiery	CARDED C.F.	CARDED Non-C.C.	COMBED C.F.	COMBED Non-C.C.
Flat knit — circular				
144 needles and less	121	0	131	0
145 to 200 needles	124	0	135	0
Over 200 needles	128	0	139	0
Ribbed knit — circular, basis size, 9 inches				
Less than 300 needles	121	0	131	0
300 needles and over	124	0	135	0
Full fashioned	128	0	139	0
Coated products				
Oilcloth				
Table and shelf	122	83.0	..	..
Enameled drill	122	60.0	..	..
Enameled duck	122	55.0	..	..
Artificial leather	122	50.0	..	..
Book cloth	127	50.0	139	50.0
Shade cloth	122	50.0	..	..
Rubber-coated and rubberized, except pneumatic casings	126	60.0	..	..
Absorbent cotton	125	0	..	..
Batting and mattress felts	105	0	0	..
Second-hand articles	0	..	0	..
Articles processed in whole or in part from comber waste	The conversion factor for such articles or such part of such articles shall be 85% of the above established conversion factor for like articles processed from raw cotton.			
Articles processed in whole or in part from card strips	The conversion factor for such articles or such part of such articles shall be 65% of the above established conversion factor for like articles processed from raw cotton. (Other waste 0%.)			

*No allowance is included for the rayon, silk, or other textile fiber content of articles (except as to rugs and mats, other than cotton weft).

sage through a carding machine but not through a comber.

CARDED FABRICS—Carded fabrics are any cotton products made from carded yarns.

CARDED YARNS — Carded yarns are yarns made of carded cotton fibers.

CARD STRIPS—Card strips are the flat strips, cylinder strips and doffer strips inclusive, which are removed during the carding process.

CASINGS, PNEUMATIC—Pneumatic casings are articles made from cord, weftless cord, and/or square woven tire fabrics, impregnated and coated with vulcanized rubber and used as the outer covering or casing for pneumatic tubes.

CHAMBRAY—Chambray is a medium weight, plain woven, cotton fabric, having a colored warp and white weft, usually dressed and calendered.

CHEESECLOTH—Cheesecloth is a lightweight, thin, loose woven cotton gauze, without dressing; also called tobacco cloth, and sometime used for mosquito netting.

CHENILLE FABRIC—Chenille fabric is a cotton fabric woven with chenille weft yarns.

CHENILLE YARN—Chenille yarn is a cotton yarn having a cut pile protruding all around at right angles.

COATED PRODUCTS—Coated products are cotton fabrics which have been impregnated with and/or to which have been applied, one or more layers of nitrocellulose, pigmented, linseed oil, clay, rubber and/or like materials in order to impart a durable and impervious surface.

COLORED—Colored is a term meaning that the fibers, in any state of preparation have been impregnated with dyestuffs and/or other coloring matter, but does not include articles having only colored borders, hems, selvages or occasional stripes used as distinctive markings, such as the types of towels which have a colored border or stripes.

COMBED—Combed is a term meaning that the fibers of carded cotton have been further straightened and separated by a combing machine.

COMBED FABRICS—Combed fabrics are any cotton products made from combed yarns.

COMBED YARNS—Combed yarns are yarns in which the carded cotton fibers have been passed through a comber.

COMBER WASTE OR COMBER NOILS—Comber waste or comber noils are the fibers which are combed out during the combing process.

CORDAGE—Cordage is a term used in a collective sense to include all kinds of twines, cords, and ropes.

CORDUROY—Corduroy is a cut weft pile fabric having a surface of pile welts.

CORSET CLOTH—Corset cloth is a strong, heavy cotton fabric, satin weave, usually with woven figured designs.

COTTONADES—Cottonades are heavy, coarse, cotton fabrics plain woven with ingrain colored checks and stripes, sometimes with napped back.

CRASH TOWELING—Crash toweling is a medium weight cotton toweling fabric, made with plain, twilled or herringbone weave, and usually having warp colored borders.

CREPE—Crepe is a lightweight cotton cloth, with a fine crinkly surface.

CRINOLINE—Crinoline is a stiff, open, lightweight cotton fabric heavily dressed, usually plain woven, commonly used for interlinings and in hats.

CUT PILE FABRIC—Cut pile fabric is a cotton pile fabric, in which the upright yarn loops have been cut and brushed.

DAMASK, TABLE—Table damask is a medium weight cotton fabric, made with uncolored and/or colored yarns, with satin or figured reversible designs.

DENIM—Denim is a strong, heavyweight cotton fabric, twill weave, woven ingrain with single yarns.

DIAPER CLOTH—Diaper cloth is an absorbent cotton fabric, with soft coarse weft yarns, and having a woven bird's-eye or diamond design.

DRESSING OR FILLING—Dressing or filling is a preparation applied to cotton fabric to improve the finish and/or add weight.

DRILLS AND TWILLS—Drills and twills are heavy cotton fabrics woven with twill weave and having distinct diagonal lines running across the face of the cloth.

DUCK—

DUCK, ENAMELED—Enameled duck is cotton duck coated with enamel.

DUCK, ENAMELLING—Enamelling duck is a heavyweight, plain woven, cotton

fabric made from single warp yarns and single or plied weft yarns.

DUCK, FLAT—Flat duck is a heavyweight, plain woven, cotton fabric made from single yarns. It is usually woven with two warp ends in each heddle.

DUCK, PLIED YARN—Plied yarn duck is a heavyweight, plain woven, cotton fabric, made with plied yarns.

ENAMELED DRILL—Enameled drill is cotton drill coated with enamel.

EXPRESS STRIPES OR HICKORY STRIPES—Express stripes or hickory stripes is a strong, medium weight cotton fabric, twill weave, woven ingrain, usually with narrow alternating colored and white stripes.

FIGURED—Figured is a term meaning woven or cut designs.

FLANNELETTE—Flannelette is a soft cotton fabric napped on both sides.

FRIEZE (LOOP PILE) FABRIC—A frieze (loop pile) fabric is a cotton cloth with uncut loop pile on the face.

GASSED OR SINGED—Gassed or singed is a term meaning that the cotton products that have been subjected to a flame or hot plate in order to remove protruding fibers.

GAUZE—Gauze is cheesecloth, fully bleached, uncolored and without dressing, commonly used for surgical purposes.

GINGHAM—Gingham is a lightweight cotton fabric, plain weave, with large or small check or plaid patterns, ingrain colored warp and weft yarns.

GLAZED OR POLISHED COTTON PRODUCTS—Glazed or polished cotton products are products that have been treated with dressing and subjected to brushing and/or calendering to produce a smooth, glossy surface.

HOSIERY—Hosiery is knit cotton footwear of any kind whatsoever.

FLAT KNIT CIRCULAR HOSIERY—Flat knit circular hosiery is cotton hosiery knit with a plain, smooth surface on circular seamless knitting machines, having a single cylinder, and classified as those with (1) 144 or fewer needle spaces, (2) 145 to 200 needle spaces, and (3) over 200 needle spaces.

FULL-FASHIONED HOSIERY—Full-fashioned hosiery is cotton hosiery knit on a flat machine to definite patterns to fit the shape of the leg and feet after seaming.

RIBBED KNIT HOSIERY — Ribbed knit hosiery is seamless cotton hosiery, knit with a firm elastic consistency, having lateral wales or inner and outer surfaces, and produced on circular knitting machines having different sets and numbers of needles in cylinder and dial, and classified as those having (1) less than 300 needle spaces, and (2) 300 or more needle spaces.

HUCKABACK TOWELING OR HUCK TOWELING—Huckaback toweling or huck toweling is cotton toweling woven with small designs and soft spun weft yarns.

INGRAIN—Ingrain is a term indicating textile products made wholly or in part of cotton yarn that has been previously dyed.

KNIT FABRIC—Knit fabric is a cotton fabric composed of one or more systems of yarns interlacing with self, or with each other, forming rows of loops, but not tied.

LACE—Lace is a cotton fabric composed of cotton yarn or thread intertwined at intervals, forming open-mesh and/or closed patterns.

LAPS — Laps are layers of carded or combed cotton fibers wound on a roller.

PICKER LAPS—Picker laps are laps consisting of cotton which has been partially cleaned by one or more picking processes and formed into a lap.

RIBBON LAPS—Ribbon laps are laps formed from sliver laps.

SLIVER LAPS—Sliver laps are formed from card slivers.

LAUNDRY NETS AND DYE NETS—Laundry nets and dye nets are open-mesh cotton containers woven or cut and sewn into tubular form and closed on one end.

LAWN—Lawn is a thin, sheer, plain woven fabric, usually lightly dressed.

MARQUISETTE — See "Scrim, Curtain or Marquisette."

MATCHED PATTERNS—Matched patterns is a term meaning an article in which figures or colors have been pieced and fitted so that the symmetrical pattern scheme is preserved.

MATTRESS FELT—Mattress felt is several layers of cotton batting arranged in tiers and cut to mattress size.

MATTRESS TICKS—Mattress ticks are cotton articles of bedding, cut and sewn into a container for felt, springs, or stuffing. They are usually made from cotton ticking, or mattress damask, and tufted.

MERCERIZED YARNS AND FABRICS—Mercerized yarns and fabrics are cotton yarns and fabrics chemically treated under tension for the purpose of adding luster to the product.

MOLESKIN—Moleskin is a strong, heavyweight cotton fabric, napped on the back, generally with a weft, faced twill or modified satin weave.

MOSQUITO NETTINGS—Mosquito nettings are:

(1) Cotton cheesecloth, heavily sized.

(2) Leno woven cotton gauze, heavily sized.

(3) Lightweight cheesecloth having several warp and weft yarns placed closely to each other at regular intervals, being about 180 meshes per square inch.

(4) Machine-made cotton netting of yarns twisted around each other so as to produce hexagonal meshes, called bobbinette.

NAPPED FABRIC—Napped fabric is a cotton fabric which has been scratched and/or brushed, in order to raise the loose fibers into a nap, on one or both sides.

NARROW FABRIC (12 INCHES OR UNDER) ELASTIC OR NON-ELASTIC—Narrow fabric (12 inches or under) elastic or non-elastic, is a woven, knit or braided web, tape, or tube with fast selvages and/or cut edges. When fabricated with the introduction of rubber thread it becomes elastic.

NET—Net is a cotton fabric made of yarn or twine knotted into open meshes of uniform size and shape.

NON-COTTON CONTENT—Non-cotton content is any material other than cotton contained in or attached to cotton articles as a part thereof, such as sizing or buttons, or rayon silk or any other textile fibers. However (except as to "rugs and mats, other than cotton weft") the "non-cotton content" figures given in the table of conversion factors herein established contain no allowance for rayon, silk, or other textile fibers.

NOVELTY YARN—Novelty warn is a cotton yarn having an unusual appearance, such as loops, knobs, or corkscrew effects.

OILCLOTH—Oilcloth is a cotton fabric spread or coated with enamel, or with vegetable oil, or animal oil, or other oils, mixed with pigments and/or minerals.

OSNABURG—Osnaburg is a plain, woven, strong, coarse fabric made of carded cotton and/or carded cotton waste yarns.

OUTERWEAR, KNIT—Knit outerwear is a knit cotton garment for outerwear of any type whatsoever, but does not include hosiery.

PAJAMA CHECKS OR NAINSOOK CHECKS—Pajama checks or nainsook checks are medium weight cotton fabrics with a distinctive cross bar pattern.

PILE FABRIC—Pile fabric is a cotton fabric having a surface made of upright loops which may be cut or uncut.

PIN CHECKS—Pin checks is a medium weight cotton fabric plain weave, with ingrain small checked or striped patterns.

PIQUE—Pique is a heavy, stout cotton fabric having a raised surface of transverse cords or welts.

PLUSH—Plush is a cotton fabric having a deep cut pile.

POLISHED—See "Glazed or Polished Cotton Products."

POPLIN—Poplin is a medium-weight cotton fabric, plain weave, with fine cross rib effect, warp yarns predominating.

PRINT CLOTH—Print cloth is a plain woven, medium-weight cotton fabric, made with single carded yarns.

PRINTED FABRICS—Printed fabrics are cotton fabrics decorated by printing with dyes, chemicals, or other substances.

QUILTING—See "Breadspreads and Quilting."

REP—Rep is a heavy cotton fabric having a transverse corded surface.

ROVING—Roving is a slightly twisted, soft and thick rope of cotton fibers.

RUBBER COATED AND RUBBERIZED—Rubber coated or rubberized fabrics are cotton fabrics spread, coated and/or impregnated with rubber.

SATEEN—Sateen is a closely woven cotton cloth, the face of which is formed either by the warp or the weft in satin weave.

SCRIM, CURTAIN OR MARQUISETTE—Curtain scrim or marquisette is a light weight cotton fabric with leno open weave.

SEERSUCKER—Seersucker is a lightweight cotton fabric, plain weave, with puckered and ingrain stripes alternating.

SEWING THREAD—See "Thread."

SHADE CLOTH—Shade cloth is a lightweight, plain woven cotton fabric, heavily filled, usually with clay, and designed for use on window shade rollers.

SHEETINGS.—Sheetings are plain, woven, heavy or medium-weight, cotton fabrics made with single carded yarns.

SHIRTING, MADRAS—Madras shirting is a medium-weight cotton fabric woven with plain white, or colored narrow stripes, or small checks ingrain.

SIZE OR SIZING—Size or sizing is a preparation applied to cotton warp yarns to facilitate weaving and/or add weight.

SLIVER—Sliver is a continuous rope of loose, untwisted cotton fibers.

SUPER-CARDED YARNS — Super-carded yarns are yarns in which the cotton fibers have been carded twice, or have received an extra amount of carding through which an additional amount of card strips and other waste are removed.

TAPESTRIES—Tapestries are medium and heavyweight cotton fabrics, usually woven with elaborate pictorial or verdure allover designs, and generally woven ingrained.

TERRY FABRIC—Terry fabric is a cotton pile fabric in which the back and face pile loops are uncut.

TERRY TOWELS—Terry towels are cotton household articles made from terry fabric, cut and hemmed or fringed.

THREAD—Thread is a cotton line composed of two or more converted cotton yarns, usually used for sewing purposes.

TICKING—Ticking is (1) a heavy, stout cotton fabric, warp face twill or sateen, woven ingrain with colored warp yarns; or (2) a cotton damask, allover designs, in mattress size, usually woven ingrain with colored yarns.

TIRE FABRICS, CORD—Cord tire fabrics are cotton fabrics woven with cabled cord warp and an occasional weft pick sufficient to hold fabric together.

TIRE FABRICS, SQUARE WOVEN—Square woven tire fabrics are strong, stout, heavy, woven cotton cloth, plain or leno weave, made with plied yarns.

TIRE CORD, WEFTLESS—Weftless tire cord is a plurality of cabled cotton cords without interlacing weft yarns.

TOBACCO CLOTH—See "Cheesecloth."

TRACING CLOTH—Tracing cloth is a fine, plain woven cotton fabric heavily dressed, glazed and transparent enough to permit tracing with ink and copying.

TROUSERING — Trousering is a heavy coarse cotton fabric, twill weave, ingrain checks and stripes, sometimes with back napped.

TWINE—Twine is a line or a cord made up of one or more yarns of medium or hard cabled twist, used for tieing, making nets and other purposes.

TUBULAR KNIT FABRIC—Tubular knit fabric is seamless fabric, composed of looped and interlaced cotton yarns, produced on a circular knitting machine.

VELOUR OR COTTON VELVET—Velour or cotton velvet is a cut cotton warp pile fabric.

VELVETEEN—Velveteen is a cut cotton weft pile fabric.

VOILE—Voile is a lightweight, low-count, cotton dress fabric, plain weave, made with hard or slack twisted yarns, usually gassed.

WARPS—Warps are cotton yarns forming the lateral basis of fabric.

WASTE—Waste is motes and fly, card strips, comber noils, slasher waste, cuttings, clippings, rags and a similar material (not including sub-standard products and short length piece goods) incident to the processing, manufacturing or fabricating of cotton or of cotton products.

WEFT—Weft is the system of yarns in woven cotton fabrics which interlaces with the warp yarns.

WOVEN FABRICS—Woven fabrics are fabrics composed of different systems of yarn which interlace with each other.

YARN — Yarn is a continuous strand, single or plied, spun from cotton fibers.

LITTLE PROGRESS DESPITE SCATTERED EFFORTS WITH

Angora Rabbit Wool

By William H. Butler

DEVELOPMENTS during the year have not brought domestic producers of angora any nearer a position to supply the few mills using this raw material with sizable quantities graded to requirements. Demand for long-fibered, high-priced angora has become greatly restricted. The shorter angora rabbit wool is doing better, though suffering competition from cheaper kinds of rabbit hair as well as from fine mohair. It seems likely that for some time to come the domestic 100% angora wool industry would be confined principally to relatively high-priced knitted materials that can be produced near some local base supply.

The actual manufacturing situation, however, has become more clearly defined. Two or three mills have been successful in spinning yarns from angora with additions of either silk, rayon or wool, and these yarns have been taken by knitting mills for production of fine, high-priced underwear fabrics. There is a larger development in the woolen yarn field for the shorter-fibered angora as well as substitute hair, including mohair and calf hair. Small quantities of these have been incorporated in women's cloakings and suitings.

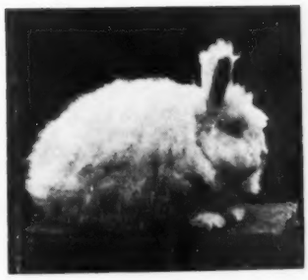
A tour of the stores discloses knitted baby bonnets and coats with the angora wool brushed up on the surface. The higher-priced articles are apparently pure long staple angora and hand knitted. Among somewhat similar but low-priced baby-coats, are those made from kid mohair as well as from rabbit hair. In fine underwear angora is combined with silk, and not a single loose fiber of angora is visible. Women's woolen suitings and cloakings have used some decorations of angora, the rabbit material being used chiefly for decorative purposes.

Some progress with angora rabbit wool is being made in the homecraft industry of New England. The yarn is spun, from a local supply, either on a Swedish flax wheel or the old-fashioned wool wheel. This yarn is mostly used for hand knit or crocheted work.

Importation of angora into the United States is in very few hands, the largest of them said to be the Masurel Worsted Mill, Inc., Woonsocket, R. I. Other importers who buy for mill account are H. Haig & Co., Inc., 246 Summer St., Boston, and Edgar Heap, Inc., 10 High St., Boston. The Masurel people have a fine reputation in Roubaix and for years have been promoters of the angora wool industry in France. Cheney Bros., So. Manchester, Conn., have been leaders in spinning angora with silk and lately several fine-yarn cotton mills have been experimenting with it.

Manufacturing of angora has been confined almost exclusively to the New England States. Imports of the raw material into New York and Philadelphia are not traceable. Boston imports in pounds, and prices for the last four years are shown herewith:

Year	Quantity	High	Low
1930	13,891	$8.02	$5.46
1931	19,400	7.88	5.84
1932	11,867	5.18	2.66
1933 (9 months)	7,280	4.78	1.37



This material is estimated 100% clean and pays a duty of 37c. per pound.

Hatters' fur or furriers stock has been used recently in woolen yarns to get the effect of angora fiber. The price at this time is $1.75 to $2.00 per pound, rates depending upon length of fiber and color. It is not claimed that much, if any, of this material is angora. Rabbit pelts of the several breeds are sorted for color and length and then sheared, chiefly for hat making purposes. The pelts of rabbits slaughtered in the summer time carry mostly hair, but in fall and winter a protective guard of soft down is grown. Some users find the latter shearing better suited to their requirements than summer hair. Imports of hatters' fur are very short-fibered and apparently not suitable, used alone, for spinning purposes.

During the year consolidation of several angora rabbit associations took place on the Pacific coast. Lawrence J. Johnson, 184 Summer Street, Boston, is eastern agent for the Bunny Wool Associations, Seattle, Wash. Attempts to bring the various rabbit breeders in Massachusetts within one association, has resulted in the establishment of the Angora Wool Marketing Association, with headquarters at 42 Inn St., Newburyport. The importing house of H. Haig & Co., Inc., Boston, is acting as representative of this association, but has not been able to do anything of importance owing to inability to obtain any bulk of wool. Other groups of growers include Angora Breeders Association of America, Buffalo, N. Y., Angora Wooller Club, Brownsville, Wis., Oregon Angora Woollers Association, Portland, Ore., and American Angora Rabbit Breeders Association, Chicago. Department of Agriculture, it is said, has been asked to arrange for a census of animals and probable production in the various parts of the country.

Wool taken off in the various farms and rabbitries in the United States has been plucked, combed, or clipped with little or no knowledge of mill requirements. The Bunny Association is endeavoring to control length of fiber by plucking or combing out the wool at specified seasons, taking the idea possibly from the shearing of wool in Texas where the 12-months, 8-months and fall wools are of differing lengths of the same merino type. Much of the domestic angora wool available has been too long for mechanical use in the mills, some of the pluckings running at least six inches. The proposal is now to establish three main grades: 1, choice pluckings, running from two to three inches; 2, baby wool and combings, running from 1 to 2 inches in length; 3, combings consisting chiefly of mats and stains. In general grade 1 will meet the fine worsted and the home industry requirements; grades 2 and 3, woolen mill requirements.

By Warren P. Seem
Julius Kayser & Co.

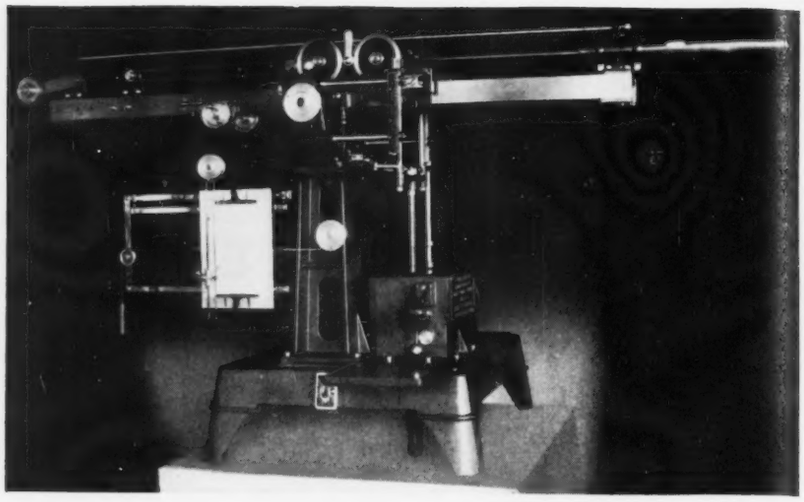


Fig. 1. Inclined-plane serigraph used in evaluation of nature

REMOVING GUESSWORK FROM THE GRADING OF

Raw Silk and Hosiery

GRADING of raw silk has, for centuries, been more or less of a guess, resulting at times in a great variation in quality. For many years raw silk was classified by inspectors who, guided by tradition, reputation of the filature, nature of the cocoon, and expediency, classified it mostly by comparison. When the demand for silk was good, the quality level was lowered, and many manual and cocoon defects were passed on to the consumer. This eventually led to selling silk on samples subject to tests by the buyer.

In January, 1932, the Japanese Government effected control of the classification of all Japanese raw silk at the Yokohama and Kobe conditioning houses, using methods and tests authorized by the Government. Raw silk engineers, trained in sericulture, reeling, and testing, replaced the inspector, and these are diligently gathering information on results of present grading.

The machines used are the seriplane, sizing reel, serigraph, and cohesion tester. The qualities measured are evenness, cleanness, neatness, size deviation, strength, elongation, and cohesion. The classification is based on a composite evaluation in percentages and divided into nine grades called AAA, AA, A, B, C, D, E, F, and G. The Japanese Bourse uses this grading in trading.

The importers copy the seriplane general evenness from the Japanese Government composite-classification certificates, quote prices on seriplane evenness and sell silk on samples subject to tests in private and public laboratories. The New York Commodity Exchange trades on a modified composite grading made at the United States Testing Co., Inc.

Private and public laboratories use various modifications of the standard seriplane method, such as different lighting arrangements and different panel standards. Some judge the evenness by the general appearance of the boards, others use the standards and correct it by the general appearance of the boards, a few consider the low average, and still others use only the general average. A few laboratories supplement the seriplane with 112½-meter sizings and traditional methods of inspection. The hosiery industry, largely through its commission throwsters, is now giving the 9-meter composite an extensive trial in eighteen laboratories and comparing it with the seriplane evenness on the same silk. So far, the seriplane has been found very faulty.

As the Japanese classification certificates are generally pigeonholed by the importers, very few are passed on to the buyer and few laboratories are able to pass on the merits of the Japanese composite grading. As only about 12% of the silk traded on the Japanese Bourse and Commodity Exchange reaches the ultimate consumer, no comparative information is available from that source. The writer, however, has checked thousands of bales and finds the grading very irregular in practice due largely to the seriplane grading of evenness.

Raw Silk Classification

The Raw Silk Classification Committee after seventeen years of service, on Oct. 20, 1933, issued a final report and transferred its work to a joint committee consisting of representatives of the raw silk importers, commodity exchange, weavers, and knitters. This joint committee is now considering the 9-meter composite method as recommended by the raw silk committee of the National Association of Hosiery Manufacturers. This history shows that the selection of raw silk is still, with a large part of the trade, very much of a guess. The 9-meter method recommended by the raw silk committee of the National Association of Hosiery Manufacturers is proposed as a composite commodity grading so as to meet not only the requirements of the hosiery industry, but also the demands of other consumers of silk. To accomplish this, eleven grades are proposed, based on five quality components of raw silk—evenness, size deviation, cleanness, neatness, and nature. Nature is classified to govern the use of the silk and to prevent mixtures of different natures. It is not used to compute the composite grading.

The guesswork is taken out of the seriplane panel method by substituting the seriplane 9-meter method. This consists of a separating attachment on the seriplane board with which 9-meter sizings are separated out of the panels. These are cut off and weighed on an automatic scale actuated by a photo-electric cell which records and adds the weights of the 9-meter sizings in denier. See Fig. 2 on next page.

The guesswork is taken out of the average size deviation by reeling 2,250 meters, instead of the 450-meter sizing which yields many accidental sizings that affect the true deviation of average size.

The guesswork is taken out of the evenness evaluation by computing it on the product of the size deviation on 9- and 2,250-meter sizings and employing mathematical laws to compute the deviation from the average size.

The guesswork is taken out of nature evaluation by measuring it on an inclined-plane seriplane instead of judging it by the province in which the cocoons were reared. See Fig. 1.

The guesswork is taken out of the evaluation of raw silk by basing it on five component qualities of raw silk instead of one, or only on the seriplane evenness as practiced by importers.

The 9-meter composite is now used in a number of filatures and found practical and fair to the reeler. Tests made in filatures are found to be in close agreement with those made in the Julius Kayser laboratory. The composite grading is used for the selection and disposition of raw silk, to predict the behavior of different grades in mill operation, and to control results by correct treatment of the raw silk. It indicates the relative quality to be expected of the product.

The grading of the evenness of hosiery as generally practiced in the trade consists of classifying the best of a lot as firsts, and the rest as seconds. By this practice, Manufacturer A's seconds may be better than Manufacturer B's firsts; and often manufacturers with high-class reputations show two grades of stockings in their first-class goods.

Fig. 3. (above) Grading cabinet for use in classifying hosiery

Fig. 2. (at left) Automatic scale actuated by a photo-electric cell employed with 9-meter sizings

In wear, the unevenness or bands are judged by the eye under various volumes of light and measured by contrast between different diameters of the band and body of fabrics, color of the leg and thread. The contrast changes under different volumes of light and is greater on sheer stockings than on heavyweight because of more open spaces which permit a greater transmission of light and thus create a greater contrast. Use of higher-twisted threads increases the number of seconds by reducing the diameter of the threads and increasing the transmission of light. This is due to the fact that the outline of the thread is shown more clearly and that there are more surface irregularities which reflect light differently.

Stockings laid flat, double, over a white or lighted surface appear more or less moire, due to the loops crossing each other and transmitting light at various angles. This confuses the inspector. Light transmitted or reflected through or from double fabric intensifies the band or unevenness beyond that shown in wearing.

During the last decade the use of hosiery has changed from an article of underwear to, at times, that of a very conspicuous article of outerwear and from heavyweight to chiffon and sheer stockings, dull in luster. This suggests that the outerwear part of the stocking should be subjected to a more critical grading than the underwear. In actual mill grading this is done.

Variations in diameter of thread from the body of fabric of about 8% show slight light or dark streaks or bands under close examination in wearing. As the diameter increases, the streaks or bands become more visible and, at times, decidedly objectionable. These variables cause a great variety of evenness patterns, due to different degrees of covering that tend to confuse the inspector in classifying the hosiery. This makes it impractical to match stockings with standard patterns.

The guesswork has been taken out of the grading of hosiery for bands or evenness by an evenness-grading cabinet developed in the laboratory of Julius Kayser & Co. This device measures contrast and other variables by filtering out with measured light and colored glass screens the moire effect and the minor bands or streaks. Thus, it makes visible to the inspector only the objectionable bands; and the action of the inspector, therefore, is reduced to that of classifying as an irregular any stocking with a visible band; others, not showing the band, are classified as firsts. See Fig. 3.

The methods outlined give to the hosiery trade a classification of raw silk, thrown silk, and hosiery that is based on fundamental principles and machine measurements; thus traditions and guesswork are being replaced with well-defined and controlled practices.

FINISHING PLANT SAVES $20 A DAY AT ONE MACHINE BY RECOVERY OF

WASTE HEAT

By William R. Clendinning

IT is rather remarkable that by and large dyers and finishers are just beginning to turn their attention to methods for recovering the heat from waste dye liquors, wash waters, etc. For many years laundries have found that the installation of heat reclaimers has been followed by worthwhile savings in fuel costs. The average dyehouse or finishing plant uses hot water in much larger quantities than does a laundry, and a few applications of heat reclaiming equipment made last year in textile mills has demonstrated that the methods employed successfully in the laundry industry are just as applicable in the textile industry—and far more valuable.

The actual value to the mill of any equipment involving a preliminary investment can be expressed in terms of dollars and cents of return. Unless this return is large enough to amortize the investment in a short time (less than three years usually) the investment will not be popular. With the great majority of heat recovery systems the amortization periods are under eighteen months. Two estimates made by the writer of the savings which have been effected by the use of heat exchangers are presented herewith.

In one silk finishing plant the machine employed for washing tin-weighted goods after the phosphate treatment has a flow of 2,000 gal. of water per hour. The temperature in various compartments is 120, 140, 160, and 180° F., respectively; and the average temperature of the waste water escaping over the tail board is about 150° F. Passage of the waste water through a suitable heat exchanger reduced the temperature of the waste water some 50° F. and raised the temperature of a like quantity of cold fresh water the same amount. The total heat transfer therefore is equivalent to approximately 830,000 B.t.u., or 830 lb. of live steam. For boilers of average efficiency (8 lb. evaporation) generation of 830 lb. of steam would require 104 lb. of coal.

If the washing machine operates 8 hr. a day, the exchanger will save 830 lb. of coal. Disregarding interest on the investment, depreciation, etc., we find that with coal at $4 a ton, and the cost of apparatus $1200 installed, the equipment will pay for itself in 723 days. Thus if the plant is on a 40-hr. week, the exchanger will be amortized in about 3 years; if the plant is on an 80-hr. week, in about 1½ years.

In a second mill with a much larger washing machine having a flow of 24,000 gal. per hour, the cost of a suitable heat exchanger was $2,000. The saving in coal is 9,960 lb. in an 8-hr. day, amounting roughly to $20.10; and the apparatus will pay for itself in 100 days; that is, in about 20 weeks if the plant is on 40-hr. basis and 10 weeks if on an 80-hr. basis.

These figures probably represent the minimum savings, as the wash machine often is the "bottle neck" of production and is operated an extra shift to keep up with the work.

It will be noted that the cost of equipment rises very little as the volume of water handled increases. The reason is clear when it is understood that but one change must be made to increase the capacity of any such system—that change being in the actual running feet of pipe coil employed. All other factors remain the same.

The method of recovering heat from hot waste water containing dyestuffs, soap, or other ingredients in solution involves the transfer of that heat through a metal wall to clean fresh water. Three types of systems are shown in Figs. 1, 2 and 3. These types vary in construction only, the principle being the same.

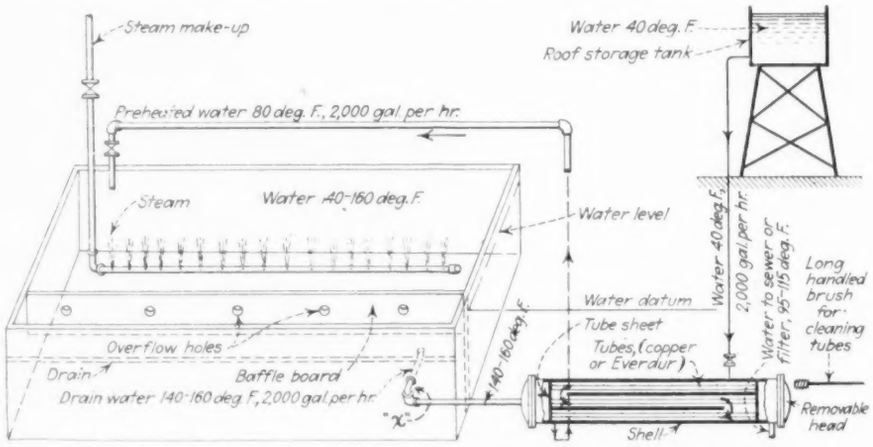


Fig. 1. Continuous heat reclaiming system for individual tubs

The system shown in Fig. 1 is suitable for use with any type of equipment where a continuous flow of waste water and a continuous flow of fresh water approximately equal each other. In the illustration, the reclaimer is shown in conjunction with a continuous washing machine (with reels, compartments, and other parts omitted from sketch). This machine is supplied with water which flows across the tub, and is heated by steam injected through perforated pipe. Flowing across the tub, the waste water passes through outlet holes into a drain basin and thence to the outlet pipe, *X*.

The heat reclaiming system operates as follows: The hot wash water passes out through drain pipe *X* and is carried into the heat exchanger shell. In this heat exchanger the waste water passes through a multitude of tubes and transfers its heat through the metal walls of the tubes to the cold water which flows around the tubes. Finally the waste water passes out the other end of the exchanger, and is passed to the sewer. Simultaneously the cold water supply (shown as a roof tank) is piped down to the heat exchanger, where it flows inside the

shell but around the tubes. As it comes in contact with the hot tubes, it takes heat from them, and finally leaves the exchanger from 30 to 50° warmer than when it entered. This preheated cold water is then used directly in the wash machine. It might, however, be piped to a hot-water storage tank.

An example of heat-exchanging equipment for use in batch applications is shown in Fig. 2. This is the typical system for use in plants where a number of machines dump their wastes according to no particular schedule. If waste water flows irregularly, but preheated make-up water is required at any time, it is obvious that some sort of heat reservoir must store up heat from each discharge of waste hot water. The hot water storage basin shown is the means whereby this heat may be stored until needed.

This storage basin receives the waste water from the various dye tubs, and discharges in its own overflow only the coldest part thereof. Separation of hot from cold water is accomplished by the use of the baffle at the extreme right end of the basin—the coldest part of the stored liquid is at the bottom, and only that part may pass the baffle and rise through the overflow into the sewer. In this storage basin is suspended the bundle of pipes through which the cold, fresh water flows while being heated. The cold water enters at the bottom of the bundle and leaves at the top, thus bringing the temperature of the preheated water and of the hottest part of the waste water most closely together.

The system shown in Fig. 3 is similar to that of Fig. 2, but it is to be noted that the storage basin is smaller in size and needs practically no attention at any time. The heat-exchanging surface is contained in a closed-shell heat exchanger, as shown in Fig. 1, which may be located at any convenient point in the plant. Naturally, the hot water from the storage basin must be pumped to the heat-exchanging surface by artificial means.

In the storage basin of this system is used the same baffle system for separation of cold and warm water strata. The suction line of the circulating pump naturally takes its supply of waste warm water from near the surface of the liquid—in the hottest zone. This system is equivalent in most respects to that of Fig. 2, being slightly different and more flexible in construction to suit local needs. Its cost may be slightly higher than the system shown in Fig. 2.

Any good master mechanic can construct devices, as shown in the illustrations, which will function and undoubtedly prove better than nothing. However, it may be said that the exact proportioning of the parts of such equipment is a job for the engineer. Without accurate design, a prediction of final efficiency in dollars and cents cannot be made. Thus the dealer in systems can present to the prospective purchaser a clearer and more accurate picture of results to be achieved than can the master mechanic.

In addition to the mechanical details, there is to be considered also the question of corrosion. It can be safely said that most solutions used in the silk industry will not seriously corrode copper, iron, or Everdur alloy. An exception to this lies in the tin solution. In other textile fields we find that Everdur, stainless steel, or Monel metal will suffice for many solutions. It is essential that before a heat exchanger is installed the problem of corrosion be studied both from the standpoint of the chemical solution involved and that of electrolitic decomposition.

The problem of cleaning the surfaces of any heat exchanger is a vital one, because the heat transmitting efficiency falls off rapidly as dirt enters the picture. It is probable that the average heat-reclaiming system should be cleaned once a week. Accordingly, it is necessary that the operation of cleaning shall be accompanied by a minimum of labor.

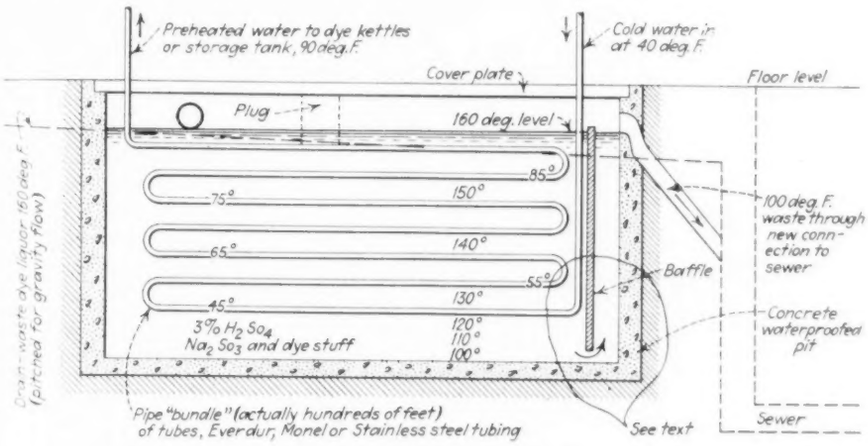


Fig. 2. Discontinuous discharge system for numerous tubs

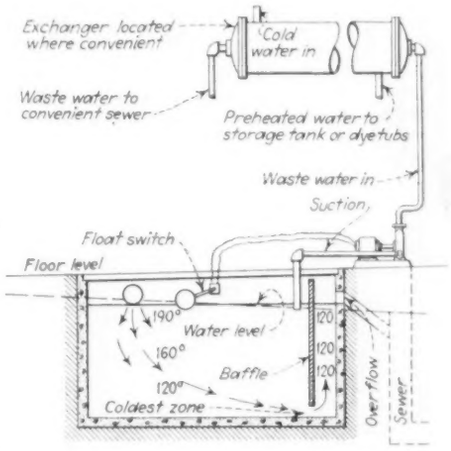


Fig. 3. Flexible system

Cleaning of pipe bundles used in exchanger systems such as are shown in Fig. 2 is quite simple, involving only a weekly washing with a hose, or even with steam. Cleaning of closed heaters of the type shown in Fig. 4 is scarcely more difficult if these heaters are so constructed that a brush may be passed through the tubes. This can be accomplished easily only if the tubes are straight and fairly short and if the heads at both ends are removable. To clean the outside surface of the tubes (subjected to fresh clean water only) it is necessary to provide a backwashing connection through which clean, hot water can be circulated occasionally in a reverse direction.

While we are on the subject of reclaiming heat the thought occurs of making other savings—perhaps of the materials in the waste water or liquor. The most important fact to remember in connection with heat-reclaiming systems is that taking the heat out of waste water has no relation to taking out other substances—it is just as simple to recover soap or tin after the heat has been removed as it is to make the soap or tin recovery first. Saving of heat and the saving of solids are problems having no connection and requiring no simultaneous consideration.

Warp Mercerizing

PROGRESS IN ELIMINATION OF PRELIMINARY BOIL-OUT

BRUITED about for several years, the mercerizing of cotton warps without a preliminary boil-out has not yet been generally adopted. Involving, as it does, the use of a wetting agent in conjunction with the caustic soda, this method presents several problems which have hindered its more widespread application. Certain mercerizers, however, have succeeded in overcoming some of the obstacles and are finding it possible to skip the boil-off box, enter the dry yarn into the caustic bath, and still get a well-mercerized yarn. The fact that the process is being used on a commercial scale, and that satisfactory results are being obtained, makes it well worth appraisal at this time.

One of the advantages claimed for mercerizing of dry yarn is that it obviates dilution of the bath and thus tends to give a more even mercerization than ordinarily results with the usual method. In addition, the elimination of the boil-out leaves more of the natural waxes on the cotton, and this, together with the addition of a wetting agent to the bath, is said to produce a fuller, rounder, and softer yarn. A further advantage which is cited is that the yarn loses less weight during the mercerizing process.

Of the various wetting agents which can be employed in conjunction with strongly alkaline solutions, those most favored at present include cresylic acid compounds, derivatives of phenol and pyridine, and certain of the higher alcohols. Investigations made a little over a year ago in England indicate that some of the phenolic fractions derived from low-temperature, vertical-retort tars and having a boiling point of 205° to 290° C. are particularly effective and low in cost.

In practice, about 1 to 2 % of wetting agent (on the volume of the bath) is added to the mercerizing liquor, the exact percentage to give the optimum results depending upon the particular compound employed. Several methods have been proposed for evaluating the wetting agents and for determining the amount to be added to the bath to yield the greatest wetting action. Of these, the Landolt test for determining the amount of shrinkage which takes place in yarn submerged in caustic solution containing the wetting agent and the submersion test are in more common use. (Both tests were described in June, 1933, issue of TEXTILE WORLD.) The Landolt test appears to be particularly useful for evaluating wetting agents, while the submersion test is more suitable for plant control of the mercerizing process.

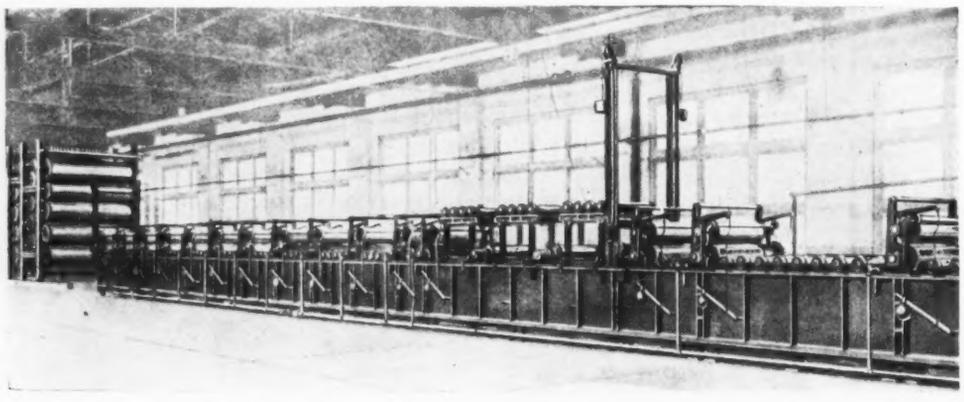
It is generally conceded that wetting agents for use in mercerizing should form a clear solution with the caustic and not a milky emulsion. If the agent is not completely soluble, there is the danger that it will precipitate, be picked up by the yarn, and thus cause considerable trouble. Interesting in this connection is the experience of a medium-sized yarn-processing plant which for several months has been mercerizing without a boil-out.

Difficulty Overcome

The practice in this plant is to add 2% of a proprietary wetting agent to the caustic. When this method of operation was first put into effect, it was found that occasionally during the run, a moss-like precipitate got on the yarn. While no entirely satisfactory scientific explanation of this phenomenon has been found, a fairly simple control method which prevents the trouble has been evolved. Tests showed that if a piece of warp end is tied into a bow and placed on the surface of a beakerful of caustic solution to which 2% of the wetting agent has just been added, the yarn will sink in 5 seconds.

Similar tests made by taking samples of caustic from the machine while it was running indicated that if a longer time is required for the yarn to sink, there is danger of precipitation. Further experiments showed that the addition of a small amount of wetting agent prevents precipitation and that the sinking time returns to the normal 5 seconds. Accordingly, a test is now made every time a lease comes up—that is, every 500 yd. If at any time it takes 10 seconds for the bow to sink, 1 pint of the wetting agent is added to the caustic box. Although admittedly an expedient, this procedure has prevented any further trouble due to precipitation.

In the past the chief drawbacks to mercerizing without a boil-out have been the difficulties encountered in keeping the amount of wetting agent in the bath at a constant and in the recovery of waste caustic wash liquors, which contain a wetting agent. These problems are being subjected to continual study, and a wetting agent said to overcome the second objection has been made available recently. It appears probable, therefore, that within the near future all of the obstacles which stand in the way of further extension of the process will be removed.



The Small Mill . . .

CONCENTRATION ON A SPECIALTY KEEPS 8-LOOM WEAVE ROOM BUSY

EVIDENCE that the small cotton mill may still be run as a virile and successful business is to be had on Boomer Street in Fall River, Mass. Here is to be found an organization which has run its eight looms on full time during the last four difficult years. Many of its 500 to 1,000 loom brothers did not even survive that period, while others have just lately emerged from lengthy shut-downs and all but fatal losses.

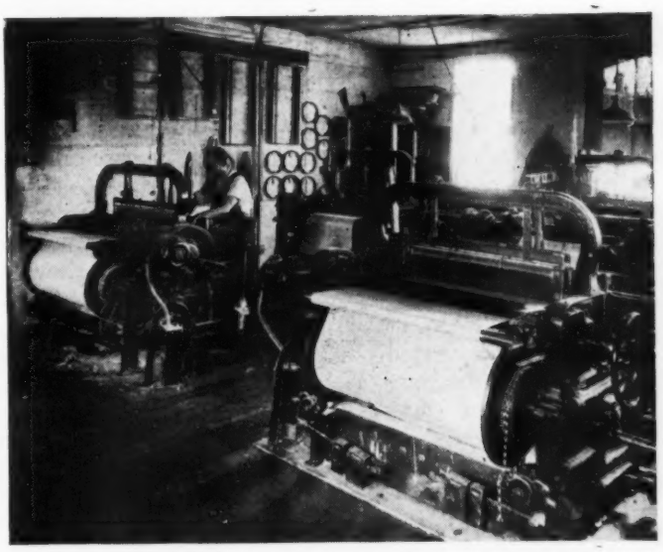
As might be guessed this 8-loom business is a specialty business. It cannot be used as an argument to challenge the supremacy on highly competitive staples of immense manufacturing units. It is, however, an object lesson in the principle of focusing the small business on matters which require a high degree of skilled, personal attention and then merchandising the idea that its product is the best of its kind.

Charles P. McClellan, whose company we are here describing, entered textile manufacture primarily to supply the needs of his already existing business. He opened a small sail loft in 1892. His growth has been gradual but impressive, until now he operates what he describes as the only establishment of its kind in the country—controlling production from the purchase of yarn to finished sails. He already had made a niche for his ultimate product—yacht sails—before he installed his warping and weaving equipment and he now cuts virtually all the product of his looms, offering very little of it for sale by the yard.

One method of approach for the small mill is evident in these last few facts: Mr. McClellan does not make a practice of selling yard goods; he sells a finished, made-up product, which is the more valuable in the user's eyes because of the high reputation which goes with it.

The sail business, according to Mr. McClellan's son, Charlie, is something like the automobile business in that the buyer has relatively few sources to pick from, and his friends' experience and his own experience come together to give him a marked preference for one particular make. He is likely to stick to that make. So it is with sails. Mr. McClellan's customers come back for yacht sails with persistent regularity and the scope of the business has grown so that he not only ships to the west coast but to ports all over the world. The business involves two generations of McClellans and will soon take on the third.

Mr. McClellan's product is for pleasure yachts entirely, running from small dinghies up to boats of maximum 90 ft. length. The fabric involved is 3 to 16 oz. duck in widths of 18 to 24 inches. The company buys yarn to its own specification chiefly combed, of Egyptian and long staple American cotton; does its warping from section beams, weaves on a battery of Crompton & Knowles looms, and makes up sails either from cloth without finish or given a water-resist or mildew-proof finish. Young Mr. McClellan explained that through control of tensions, take-up on the loom and precision let-off control, and due to the character and twist of the yarn, the fabric produced is virtually without shrinkage.



Glimpse of McClellan's yacht-duck weave room

Yacht duck is not in competition with the heavier, wider ducks. There are only a few makers of it and a very considerable proportion of this country's product comes from those eight looms on Boomer Street. Its narrow width is due to mechanical requirements of sail construction and some British makers are said by Mr. McClellan to go to as narrow as 12 inches.

Although sail making has been the backbone of the business, Mr. McClellan has been willing to supplement this with other lines when and where proper opportunity offered. During the earlier days of the motor car, he made automobile tops and seat covers but the decline in use of open cars made it wise to terminate this branch of the business five or six years ago.

Another branch of the business which is thriving is awning braid, of which the McClellans state they make two-thirds of the country's output. They also state that they were the first to make vat-dyed braid, which type has supplanted the other sorts of cotton awning braid and even the high quality wool braid. This department operates 250 braiders of New England Butt Co. make.

Charlie McClellan stood at the door of his office looking out over the first floor of the plant. "This is just the right size business," he said. "One man can manage it all and know everything that's going on. No red tape, no delegation of authority through three or four sets of executives. We didn't expand recklessly when prosperity was at its peak; in fact, I don't want to see this business any larger."

As a mattter of fact, in proportion to its field, Mr. McClellan's business is a large business. That is probably the secret of the successful small mill—a leading position in a specialty field, which, even as a whole, is too small to attract the volume producers.

Specifying

By J. Frederick Cahill
Knitting Consultant

MISUNDERSTANDINGS between designer and cutter need not be so frequent if the suggestions offered here are adopted. The procedure outlined is largely applicable also to pattern-wheel specifications for latch-needle machines, as Mr. Cahill will explain in more detail in a later article. Previous articles of this series on circular-knitting design appeared in the issues of May 28 and July, 1932, and February and April, 1933.

THE general principles governing the distribution of the cuts in the pressers being the same, whether the design is simple or elaborate, it is no more difficult to lay out a presser diagram directly according to the design and lap than to lay it out in the reverse order.

Occasions arise, however, in which it is desired to take pressers that have been laid out for a specific lap on one machine and use them on another machine having a number of needles which, when divided by the presser, shows an opposite lap—plus to minus or minus to plus. The effect produced by such a change is that the figure is inverted but not reversed, and the incline caused by the number of feeds is reversed.

In symmetrical figures, such as diamonds, or in straight-line vertical designs, such inversion is not observable; but in irregular figures interesting results sometimes are brought about. The inversion of the figure is due to a reversal of the sequence in which presser divisions make their contact with the needles in each design column.

Order of Reading

It is usually the case that pressers are purchased from a manufacturer ready for use and cut after diagrams furnished by the knitter; but it is not always the case that the mind of the knitter and the mind of the maker of the pressers meet on the subject. To avoid errors and misunderstanding, a presser diagram should read in exactly the same order as the tuck stitches are to appear on the needles after passing the presser.

All cut pressers must have shallow cuts or "prints"; and on a diagram it is not at all necessary to indicate them by identifying marks if the diagram is made on design paper, as it frequently is. The deep cuts or, as they are generally called, merely "cuts," are the working elements in the matter of reproducing the design in the fabric. The "prints," of course, from a design standpoint serve to place the cuts at the prearranged locations.

The methods employed in making presser diagrams vary rather widely, but the method employed is not important so long as it conveys the desired information in understandable form. Certain methods are illustrated by means of Fig. 5. This is drawn in a design field of 21 needles for eight feeds with four cut pressers of five divisions each to be used on 1176 needles.

The number of tuck courses in a design field is equal to the sum of the cut-presser divisions in the pressers on one-half the number of feeds; and it is also true that the sum of such cut-presser divisions times the number of prints and cuts in each division equals the sum of the presser circumferences. This being true, it is evident that four cut pressers of five divisions each would make twenty impressions in each design column in the fabric before coming again to a vertical repeat position.

Though eight feeds are called for in the design shown in Fig. 5, there are but five divisions in any one presser; and the number of revolutions of the cylinder required to bring five presser divisions to a repeat position is the same whether one or four or any other number of pressers is used.

Ignoring plain courses, then, the design field for four cut pressers having five divisions each, and each division embracing 21 needles, is 4 x 5 or 20 tuck courses high and 21 needles wide. On design paper such a field occupies a rectangle 21 squares wide by 20 squares high, which is very nearly square. But it must be remembered that, in laying out the design field, plain courses are being ignored; while in the actual knitting a plain course will alternate with a tuck course and there will really be 40 knitting courses.

While on the design paper the introduction of the plain courses would have doubled the height of the design, they will not have that effect on the fabric. This is due to the fact that tuck stitches tend to shorten the fabric along the wales; and while the design, as knitted, will be higher than its width, it will not be twice as high. Because of this vertical elongation of a design in knitting, it should always appear squat and stocky on the design paper.

Knowing the number of stitches per inch and of the wales per inch in a fabric normally knitted on a machine, a knitter can estimate the size of design figure as it will appear in the fabric, giving consideration to the fact that tuck stitches will have the effect of counteracting the elongation due to plain courses and of widening the fabric at the same time.

Meaning of Symbols

The courses in the design shown in Fig. 5 begin at the top of the design field, and the first course also represents division 1 of presser *A*. The letters and figures down the side of the column indicate the different pressers, and it will be noted that there are five series of the four letters vertically disposed. The figures beside the letters indicate the presser divisions in each presser; and it will be noted that while the letters are in series the figures beside them are the same within each repeat of the series.

In the first or top series, *A*-1 indicates that that division is the first division of the first presser, or the division that prints the first course in each vertical repeat of the design. The first division in the second, third, and fourth pressers is indicated successively by *B*-1, *C*-1, and *D*-1. The next-lower series, *A*-2, *B*-2, etc., indicates the second divisions; and as there are five divisions in each presser, the lowermost series of letters ends with *D*-5.

In each revolution of the machine, due to a plus lap causing a gain on the needles by the presser to the extent of one division, the effect in the fabric is that the whole first series of divisions is transferred to the column ahead, one at a time and four courses lower. In order to make sure of this transfer of the division of the presser if there is but one, or the section of divisions if there are more, care should be taken to indicate in which direction

Presser Cuts

KNITTING DESIGNER SHOULD PREPARE CLEAR INSTRUCTIONS FOR CUTTER

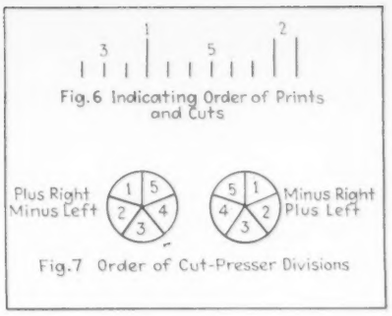


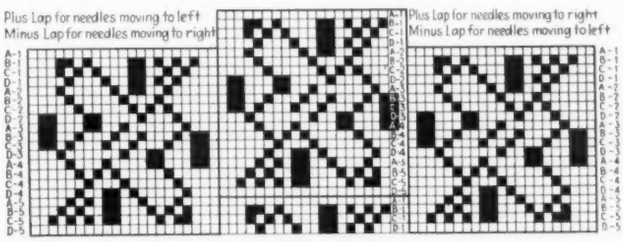
Fig. 6 Indicating Order of Prints and Cuts

Fig. 7 Order of Cut-Presser Divisions

the divisions must read when the cuts are made in the pressers. If the pressers are to be of small size, or, on a coarse gage, of a comparatively small number of cuts (60 to 100), the presser diagram may be transferred to a sheet or strip of design paper having squares of the same size as those on which the design has been laid out.

For a plus lap on a machine in which the needles move toward the right, the start should be made at the right-hand end of the strip. Marks are made on the strip to correspond to the vertical boundaries of the design column and to that section of the strip immediately under the Division *A*-1. The marks that indicate cuts (usually *X*'s) are then transferred to the strip.

Because of the fact that the presser, in its gain upon the needles, will move to the right, the strip of paper


Plus Lap for needles moving to left
Minus Lap for needles moving to right
Plus Lap for needles moving to right
Minus Lap for needles moving to left
Fig. 5 Cut-Presser Design

should now be moved to the right and placed under the division indicated by *A*-2, with the mark that indicates the column boundary now at the right while another mark is placed at the left.

The marks indicating cuts in division *A*-2 are transferred to the strip, and this procedure is followed until all divisions of the presser have been transferred. The result is a development of the circumference of the presser into a straight line. This procedure is continued with all the pressers in the same way. The marks indicating cuts will appear in the same order on the diagrams as the tucked stitches are to appear on the needles after they have passed the presser.

The diagrams prepared in this manner should read the same way for a minus lap on a machine with needles moving toward the left. For a minus lap on a machine with needles moving to the right or a plus lap on a machine with needles moving to the left, the strip of design paper should be started at its left-hand end and moved toward the left.

The result obtained by taking the presser diagram directly from the design by means of a strip of design paper is sometimes, however, rather cumbersome. A long narrow strip is difficult to handle and easily torn.

Other Methods

Some knitters prefer to show the difference between prints and cuts by means of a series of vertical marks, short marks to indicate prints and longer marks to indicate cuts. This method is illustrated by Fig. 6, which reads "3 prints, 1 cut, 5 prints, 2 cuts," or "print 3, cut 1, print 5, cut 2." Figures are placed above the marks to relieve the maker of the pressers from the necessity of counting squares or marks. If carbon copies of the order and diagram are kept at the mill, responsibility is very definitely placed in the case of error in cutting.

Such a diagram may be produced on a typewriter and a carbon copy made at the same time, using the small *i* and *l* for short and long marks. Other letters, such as *o* for print and *x* for cut, can of course be used.

Sometimes a combination of letters and figures is used, with *P* representing print and *C* representing cut. Expressed by this method, the short series used as an example reads *P*-3, *C*-1, *P*-5, *C*-2. This method requires less space and may very readily be produced on a typewriter with a carbon copy.

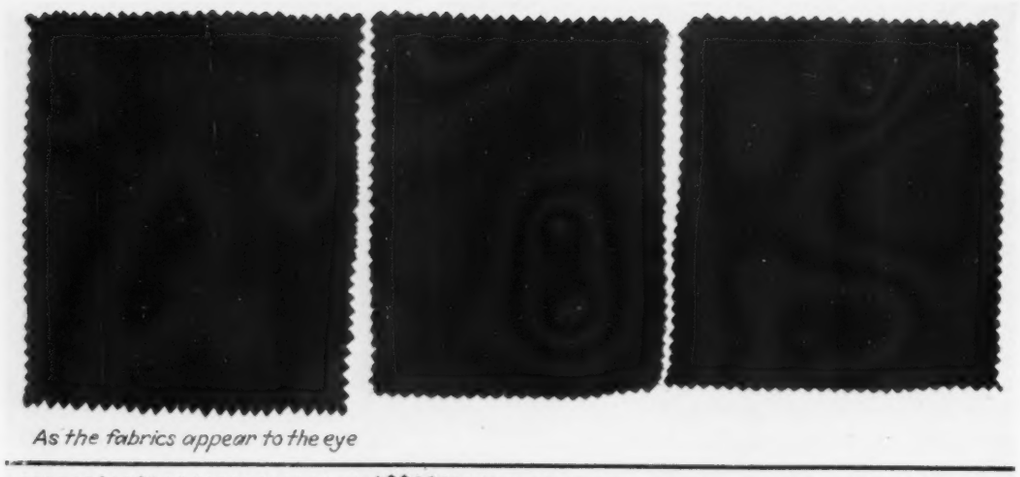
Another type of diagram consists of the separate divisions of each presser in a column alone, in the same order that they appear in the design, with the divisions numbered from the top down. Below the column a series of figures is placed horizontally to show the order in which the divisions should be read.

For a plus lap in a presser to be used on a machine with the needles nearest the operator moving toward the right and one with a minus lap to be used on needles moving toward the left the divisions should read 5, 4, 3, 2, 1; while on a minus lap to right and a plus lap to left they should read 1, 2, 3, 4, 5, both reading around the presser as shown in Fig. 7.

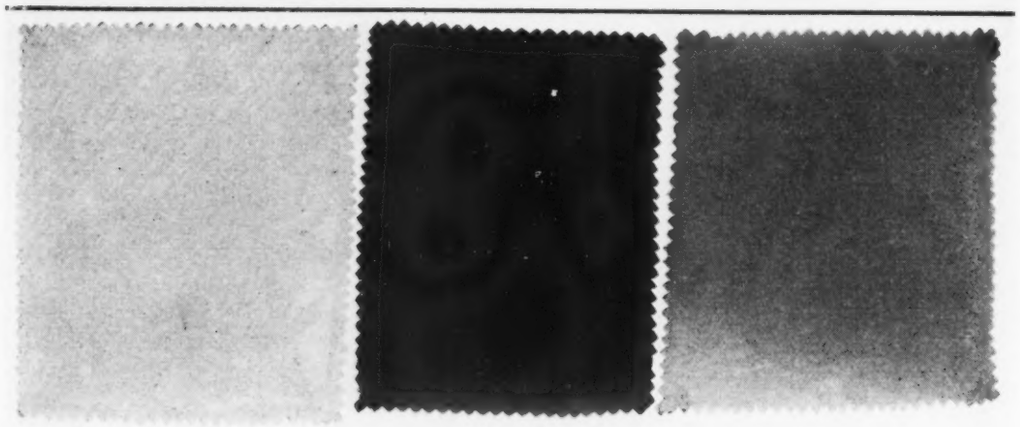
Whatever method of expression is employed in the diagram, the series of prints and cuts to be used in a presser must first be taken from the design in the proper order. For a diagram of a presser with a plus lap moving to right or a minus lap to left, a start may be made at the right end of the first division, reading to left, then joining the left end of the first division to the right end of the second and continuing until all divisions have been so joined. If reading or counting to the left seems awkward, the start may be made at the left end of the last division in the presser and, with the reading being conducted to the right, the joining may be made to the left end of the next higher division, with the finish at the right end of division 1. The result is the same.

For diagrams of pressers with a plus lap moving to left or a minus lap to right, a start may be made at the left end of division 1 of each presser; and, with the reading to the right, the right end of the first division may be joined to the left end of the second division; and so on to a finish at the right end of the last division.

With the mutual understanding on the part of the knitter and the maker of the pressers that a presser diagram of any kind is also a diagram of the order in which plain stitches and tuck stitches should appear on the needles, and with an index point in the first division of each presser as an aid to setting, there should be no difficulty in having pressers properly cut. Usually, if a design shows a vertical line of squares with no "cuts," that line is selected for the index point on a print.



As the fabrics appear to the eye



Same fabrics photographed by infra-red (or heat) rays

HEAT-REFLECTING PROPERTIES OF DYED WOOL SHOWN BY

Infra-Red Photographs

THAT black is a "hot" color is the common opinion. That this is not necessarily true in shown by a new tool for the textile technologist—infra-red photography.

Investigations by P. W. Cunliffe, of the Wool Industries Research Association, England, revealed that infra-red photography shows marked differences in the heat-reflecting properties of fabrics dyed in shades apparently identical to the eye. Therefore one of the possible uses of infra-red photography is in the selection of dyestuffs for application to fabrics to be dyed in dark shades and intended for summer use. Dr. Cunliffe's work showed, for example, that a 4% dyeing of Acid Black HA (C.I. 246) reflects practically all of the infra-red rays (invisible heat rays) to which the photographic plate is sensitive; on the other hand, a 6% dyeing of Eriochrome Black A (C.I. 204) absorbs practically all of these rays.

In order to corroborate the research carried out in England, we obtained, through the courtesy of the General Dyestuff Corp., some twenty samples of wool fabrics dyed in dark shades with various colors. Photographs of these were taken by means of ordinary light and by infra-red rays.

Typical of the results are those shown in the accompanying illustrations. A sample dyed with Napthylamine Black 8B (C.I. 246) is shown at the left of each series; one dyed with Diamond Blue Black EB (C.I. 201) in the center; and one dyed with Sulphon Cyanine Black BA (C.I. 307) at the right.

Other dyeings which reflected a large percentage of infra-red rays, and, therefore, photographed to a light shade include Sulphon Acid Blue BA (C.I. 208), Amido Blue GGK, Wool Fast Blue BLA (C.I. 833), Patent Blue A (C.I. 714), Patent Blue VA (C.I. 712), and Alizarine Astrol B (C.I. 1075). Those absorbing the heat rays and photographing to a dark shade include Napthylamine Black D (CI. 308), Diamond Blue Black RB (C.I. 202), Chromogene Black ETO (C.I. 203), and Diamond Black FNW. Samples intermediate between these two classes include Palatine Fast Black WAN, Sulphon Cyanine 2 BA (C.I. 289), Palatine Fast Blue GK, and Wool Fast Blue FFG.

It is probable that since a dyeing which reflects heat rays, and therefore gives an infra-red photograph of light shade, should result in a cooler fabric than a dyeing which absorbs heat rays and consequently gives an infra-red photograph of darker shade. Preliminary experiments to determine the amount of heat transmitted by wool fabrics dyed in dark shades with various colors indicate this is generally true.

Infra-red photography of textiles is little more difficult than ordinary photography; and since it has several applications other than the one discussed here, it merits the further attention of textile men and dyestuff manufacturers.

Strength and Yarn Count

NEW CORRECTION FORMULA BASED ON 70,000 COTTON SKEIN TESTS

THE degree of variability in the size of cotton yarn and the consequent need for a method of converting skein strengths to those for a specified or nominal size were discussed by Malcolm E. Campbell, U. S. Bureau of Agricultural Economics, Clemson College, S. C., in a paper he presented at the recent meeting of Committee D-13, the textile committee of the American Society for Testing Materials, at Providence, R. I. A survey of the literature, Mr. Campbell pointed out, shows that the results of most spinning tests are converted or "corrected" by one of two methods, both of which are based upon the assumption that within sufficiently wide limits skein strength and yarn number are inversely proportional. He explained and showed graphically that the assumption is incorrect.

Mr. Campbell offered a new empirical formula, based

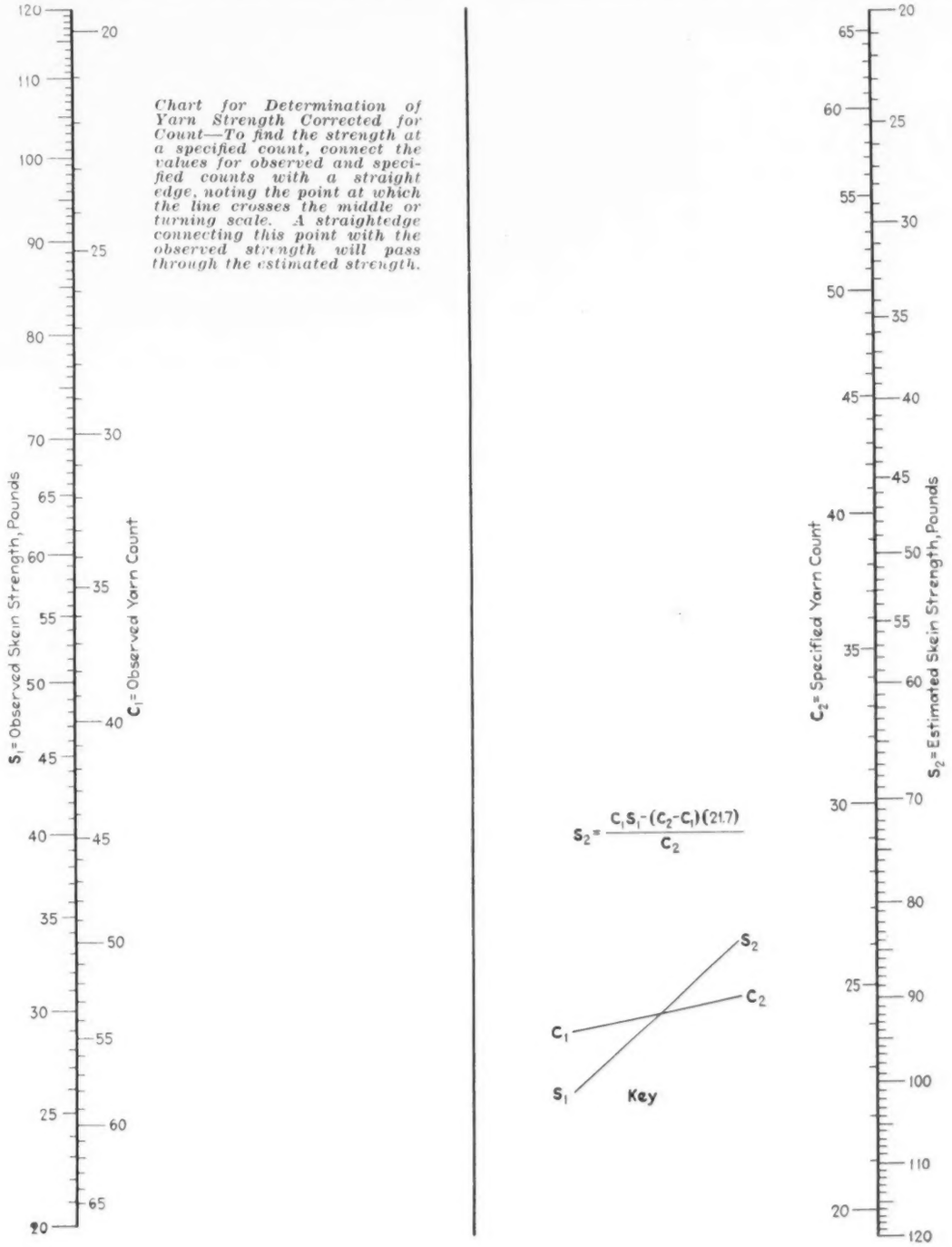


Chart for Determination of Yarn Strength Corrected for Count—To find the strength at a specified count, connect the values for observed and specified counts with a straight edge, noting the point at which the line crosses the middle or turning scale. A straightedge connecting this point with the observed strength will pass through the estimated strength.

Comparison of actual skein strength of 28s yarn with that calculated by old and new formulas from widely different counts (strength expressed in pounds)

Cotton	Actual 28s	Calculated for 28s from 22s		36s		44s	
		Old	New	Old	New	Old	New
Kekchi, 1¼"...	78.6	80.4	75.7	74.3	80.5	67.6	80.0
Lone Star, 1".....	74.2	78.8	74.2	68.8	75.0	62.4	74.8
Acala, 1¼".....	84.9	87.4	82.8	82.0	88.2	75.1	87.5
Lone Star, 1 1/16"...	75.7	79.2	74.6	71.7	77.9	66.0	78.4
Mebane, 1/16-1".....	71.4	75.1	70.5	66.3	72.5	60.5	72.9
Rowden, 1".....	73.9	76.7	72.0	64.9	71.1	56.7	69.1
Average.....	76.45	79.60	74.97	71.33	77.53	64.72	77.12
Dev. from average..	0	+3.15	−1.48	−5.12	+1.08	−11.73	+0.67
Percent deviation...	0	+4.12	−1.94	−6.70	+1.41	−15.34	+0.88

upon the results of more than 70,000 individual skein tests, with which yarn strengths can be converted to those for specified sizes with due regard to the true relations of skein strength to count. This formula is as follows:

$$S_2 = \frac{C_1 S_1 - (C_2 - C_1)\ (21.7)}{C_2}$$

In this formula C_1 is the observed count; C_2, the specified or "nominal" count; S_1, the observed skein strength; and S_2, the converted skein strength.

To illustrate the use of this formula, the author used the following example: Assume that a skein of 20.75s yarn has a breaking strength of 110 lb. and that a specified count is 22s. The corrected skein strength is:

$$\frac{110 \times 20.75 - (22 - 20.75)\ (21.7)}{22} = 102.5 \text{ lb.}$$

Examination of the new formula shows that it consists of the generally accepted formula $C_1S_1C_2$, to which has been attached a correction. Although staple length and other data affect the value of the constant, they do so very negligibly, and hence 21.7 is adopted as standard. The accompanying table compares results obtained by the new and the old formula.

The accompanying alignment chart or nomograph permits a rapid use of the formula. It is especially helpful in estimating closely and quickly the probable strengths of yarns covering a considerable range of count.

It will be seen from the above that the formula, in addition to being useful in correcting yarn strengths to specified counts, is also suitable for estimating fairly closely from any count and strength which have actually been determined, the probable skein strength of any other count into which the cotton involved may be spun. It also has value in placing test results of different spinning laboratories on the same count basis, thus permitting comparisons to be made. Through its use, economies in spinning tests may be effected by spinning only extreme counts and interpolating for mid-counts.

Wool Overseers' Association

JOINS HALF-CENTURY CLUB

STARTED in February, 1883, by 16 original sponsors, the National Association of Woolen and Worsted Overseers celebrated its 50th anniversary at the annual meeting held in Boston on Nov. 18. Two of the original founders, John T. McCormack of Hyde Park, Mass., and W. V. Philbrick of Worcester, Mass., were among the nearly 275 members who attended the meeting. As is the usual custom of the organization, "Night Before" was celebrated on Friday evening, with Robert J. Harrington of Dalton, Mass., in charge of an entertainment program consisting of amateur and professional talent.

Two changes in name have marked the course of the association which, once well started on its way, has consistently had a large membership, the present number being in the neighborhood of 1,400. The original name was the New England Association of Woolen Overseers. This was changed to the National in 1885, and in 1887 the present name was adopted to admit worsted overseers. John T. McCormack, who was present at the anniversary meeting, acted as temporary secretary at the organization meeting in 1883.

In keeping with the established practice of the association, the only contested office at the elections this year was that of third vice-president; all other officers being moved up one place to take care of the retirement of John F. Campbell as president. Three members had been nominated for the office of third vice-president at the spring meeting last May and the election at the annual meeting was a lively affair. When the ballots were counted it was found that Herbert E. Fulton, Sanford, Me., was the victor.

The complete slate of officers now stands: president, Abraham L. Booth, Providence, R. I.; first vice-president, John J. Fanning, Baltic, Conn.; second vice-president, John C. Marley, Lawrence, Mass.; third vice-president, Herbert E. Fulton, Sanford, Me. Officers re-elected were: secretary, James J. Burns, Washington, R. I.; treasurer, Thomas Buchan, Hough's Neck, Mass.; secretary of the beneficiary association, Peter J. Harney, Webster, Mass.; trustees, Robert J. Harrington, Dalton, Mass., Edgar Taft and James Wilson, both of Providence, R. I.

The retiring president, John F. Campbell, presided at the business session Saturday morning, Nov. 19. The attendance was unusually large. Reports of the secretary, treasurer and secretary of the beneficiary department. Of the officers, Thomas Buchan has served for the longest time, having been treasurer for 28 years.

At this golden jubilee fifteen new members were voted admittance to the association and sixteen new applications for membership were taken in charge by the committee to be voted on at the spring meeting.

Both charter members present at the meeting spoke briefly and the usual medal of office was then presented to Mr. Campbell, the retiring president. It was voted to hold the spring meeting at Rocky Point, R. I., and to limit expenditures to $150. A luncheon followed the adjournment of the meeting.

Modern-Style Brocade

COLOR AND WEAVE GIVE ABSTRACT EFFECT

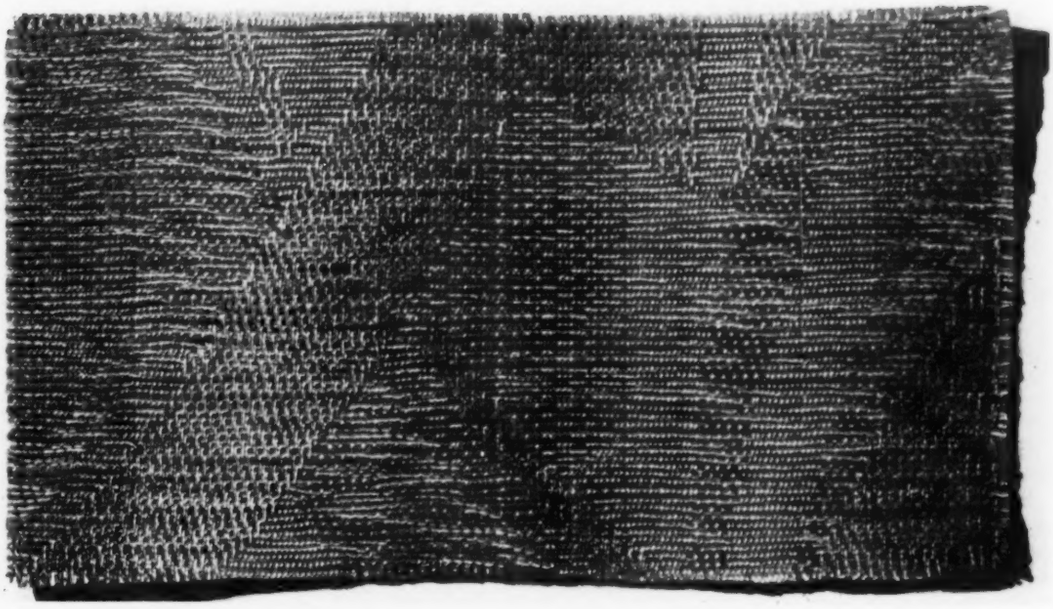


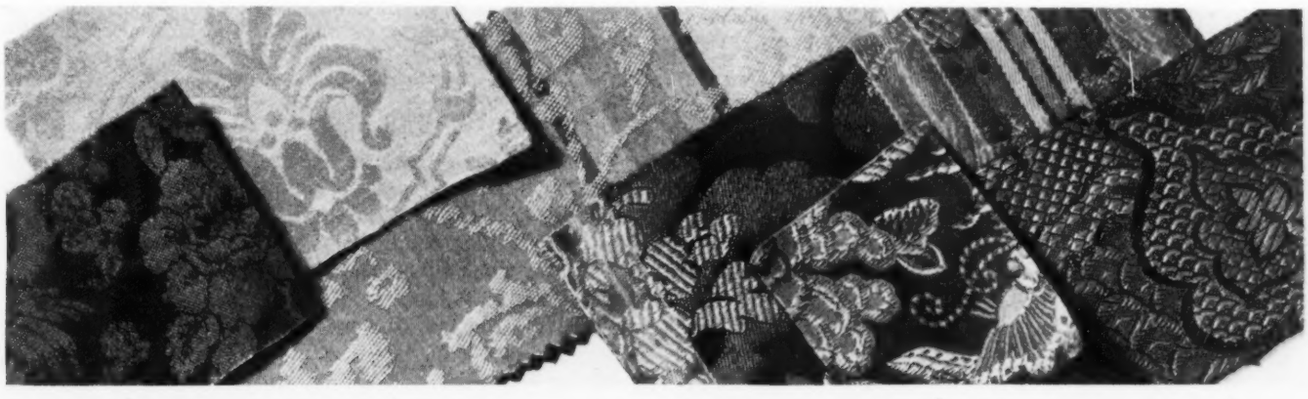
Fig. 1. Modern, abstract style in brocade.

By C. F. Harleston

THE sample of brocade in Fig. 1 is of modern conception in both design and color, and it gives evidence of remarkably skillful handling. The rayon warp, which consists of two 150-denier ends plied, is plotted in jaspé-stripe pattern. The jaspé effect is brought out to good advantage by the warp twill. The filling is a novelty yarn made up of 32/2 blue-dyed cotton, 7½s blue-dyed cotton slub, and 30/2 gold-dyed cotton, all three loosely twisted together to a resultant count of 3.8s. In addition to the warp twill the fabric embodies plain weave and a 3-and-1 filling twill. The design may be classified as a modern abstract style.

More conventional brocades contrasting with the modern type are shown in reduced size in Figs. 2 to 7.

2 6



3 4 5 7

Fig. 2. Medium-quality drapery. Warp, 150-denier bleached rayon, set 128 ends per inch. Filling, 30/2 deep-rose mercerized cotton, 52 picks per inch. Weave, satin on plain ground.

Fig. 3. Morning-room or drawing-room drapery. Warp, 200-denier gold-dyed rayon, 96 ends. Filling, 2/8 black worsted, 72 picks. Weave, satin on plain ground.

Fig. 4. Drawing-room or bedroom drapery. Warp, 32/2 mercerized cotton dressed to give jade, black, brown, blue, and pink stripes, with particular emphasis on jade and pink. 66 ends. Filling, 200-denier bleached rayon, 56 picks. Weave, 8-end filling-satin figure on plain ground.

Fig. 5. Double-cloth reversible brocade of pocket-cloth type. Warp, 50/2 cotton alternating red and blue, 92 ends of each totaling 184 ends. Filling, 7-dram Japan tram, alternating gold and green, 52 picks of each totaling 104 picks.

Fig. 6. Covering for drawing-room furniture. Warp, 40/2 cotton dressed to give stripes of black, tangerine, crimson, cool-brown, camel, reseda, and blue, 100 ends. Filling, 300-denier gold-dyed rayon, 40 picks. Elaborate weave includes 3-and-1 filling twill on sateen.

Fig. 7. Double-cover non-reversible brocade, for furniture covering. Warp, 2/2 black cotton, 40 ends. Filling, 150-denier rayon alternating scarlet and gold, 56 picks of each totaling 112 picks. Small damask weaves.

AGRICULTURAL RELIEF AND INDUSTRIAL RECOVERY PROGRAM DISCUSSED AT

Pinehurst Meeting

Ralph E. Loper

GENERAL approval of the NRA program for textiles, some criticism of the policies of the Department of Agriculture, and discussion of the processing and floor stock taxes, featured the annual meeting of the North Carolina Cotton Manufacturers Association, held at Pinehurst, N. C., Nov. 16 and 17. An excellent analysis of cotton manufacturing costs under the NRA was presented by Ralph E. Loper, industrial engineer, Fall River, Mass.

Captain A. M. Fairley, vice-president and general manager, Waverly Mills, Inc., Laurinburg, N. C., a leading manufacturer of carded yarns, was elected president of the association, succeeding Charles A. Cannon, Kannapolis, N. C. Also elected at the Friday morning business session were: J. A. Long, Roxboro, N. C., first vice-president; and Harvey W. Moore, Concord and Charlotte, N. C., second vice-president. Hunter Marshall, Jr., Charlotte, secretary-treasurer, was re-elected.

New members of the board of directors were elected, as follows: R. T. LeGrande, Shelby, N. C.; W. H. Ruffin, Durham, N. C.; J. M. Gamewell, Lexington, N. C.; A. H. Bahnson, Winston-Salem, N. C.; A. R. McEachern, St. Pauls, N. C., and F. B. Bunch, Statesville, N. C., all to serve for three years; and W. L. Balthis, Lowell, N. C., to fill the vacancy caused by the elevation of Mr. Long to the position of vice-president.

Declaring that the undesirable features of emergency legislation resulting from the "New Deal" are far outweighed by the good points, Charles A. Cannon, in the president's annual address, predicted that "we will meet our problems, conquer them, and make a success of the NRA." He reviewed the good work of the cotton committee in working for better cotton grade and staple standards and urged all manufacturers to devote more attention to this work. Mr. Cannon also emphasized the importance to interior-located mills of the fight against lower barge freight rates on raw cotton. He added:

"The Agricultural Adjustment Act has brought its problems. The processing tax has been applied to cotton and other farm products. It is to be regretted that the Secretary of Agriculture and his advisors apparently have not understood that the farmer whom he is trying to help is the cotton manufacturer's best customer. There is no conflict between the farmer and the cotton manufacturer. Higher prices for farm products necessarily means higher costs for the things the farmer buys. It should not be overlooked, however, that the farmer will pay his mortgages, interest and taxes much easier with higher priced commodities.

"Statements issued by the Department of Agriculture have been misleading. I am afraid that consumer resistance to the increased costs, caused by higher wages, shorter hours, higher cotton prices and the processing tax, is being built up by the Department of Agriculture. If the recovery plan is to work successfully, we need the cooperation of the Department of Agriculture. If the consumption of cotton is to be maintained or increased, we must have a compensating tax on competing fibers."

Whatever margin of profit the cotton textile industry had during the first two weeks under its code has gradually disappeared, according to Mr. Loper, whose address was similar to his discussion at The Cotton-Textile Institute meeting, which was reported in the November issue of TEXTILE WORLD. His remarks on the question of profiteering in the industry follow:

"The 80-hour limit on machine operation has gone a long way toward removing the menace of overproduction, yet the cotton-textile industry still has ample capacity, which will serve as a continuing protection for our customers. This is clearly shown by the fact that, although average activity of the industry during the three years ended with April, 1933, was 6,137,000,000 spindle hours per month, it has averaged 7,700,000,000 spindle hours per month since the adoption of the code. Over 1,000 competing plants contributed to this production, and the largest unit operates only about 3% of the spindles. Certainly there is no possibility of profiteering by cotton mills.

"Before the products of cotton mills reach the ultimate consumer they usually pass through other manufacturing operations, all of which are now under codes and, therefore, have increases in cost which must be paid by the ultimate consumers. Take for example an apron overall made from a standard 2.20-yd., white-back denim. A year ago this sold at wholesale by one of the leading manufacturers for $12 per doz. This was the lowest price on these overalls in many years. During the past year the direct labor and cutting cost in this plant has advanced 31%. The cost for materials and trim has advanced 93%. The wholesale price is now $17 per doz., which leaves this large manufacturer 29c. less per doz. than he had a year ago, to cover his indirect labor, selling expense, overhead and profit. These overalls now retail for $1.75 to $1.85 each and in 1926, when the wholesale price was $19.80 per doz., they sold for $2.29 each. This shows that the percentage mark up at retail is now slightly less than it was in 1926.

"Of course, it is possible to find some advances in retail prices which are not justified by the wholesale prices, but our studies show that this is not common. In fact there is much merchandise still on sale in retail stores which does not represent replacement values. It is safe to say that textile prices at retail should be about 25% higher by next spring. The success of the textile codes depends in large measure upon the acceptance by the general public of these higher prices.

"Textile prices are still going to remain dangerously close to manufacturing costs for some time to come unless mill executives watch their increasing costs carefully and insist upon a price which at least includes something toward interest on investment. This in turn is the best assurance to our employees that the improvement in wages and working conditions resulting from the code will be sustained."

Carl R. Cunningham, of Atlanta, Ga., manager of the traffic department, in his regular report at the Friday morning business session, reviewed his activities in the interest of lower freight rates on cotton and other products used and shipped by the textile mills. He urged manufacturers to support legislation for the adequate regulation of motor truck transportation.

Resolutions passed Friday morning included one commending the Cotton-Textile Industry Committee for its success in drafting the code of fair competition, and another giving approval of a proposal to deepen the Cape Fear River to permit water transportation to Fayetteville, N. C., and of the plan to construct a barge canal across the Florida peninsula from the St. Mary's River to the Gulf of Mexico. It was felt that the completion of these projects would benefit mills in North Carolina receiving cotton from the Central Cotton Belt.

Hon. Thomas J. Heflin, former senator from Alabama, was the guest speaker at the annual banquet.

Weave Room to Blame!

IMPERFECTIONS IN FINISHED WOOL GOODS TRACED TO LOOM

By George Rice

A CERTAIN serge was finishing well as to color and handle, but within an average of 10 in. from one selvage the luster was noticeably impaired. It appeared as though the nap had been raised a little too much along this edge and that an attempt had been made to equalize the finish by close cropping.

The trouble was run down to one loom. Here the picker stick on the side which corresponded to the imperfect side of the cloth, was gouged out so much by wear that a shoulder had been created like that shown at *A* in Fig. 1. This served to lift the back of the picker and impart a staggering motion to the shuttle. It happened that the shuttles were somewhat rough, and the combination of unsteady motion and rough surface ruffled and chafed the warp threads for several inches inside the shed at each pick. After traveling some 10 in. in the shed, the shuttles steadied themselves. The loosened fiber in the yarns at the edge caused a feathery condition which prevented the fabric at this place from taking on its full brilliancy of finish. A new picker stick answered.

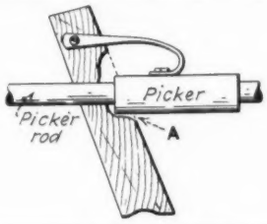


Fig. 1. The shoulder of the gouged picker stick lifted the picker on every revolution of the loom, causing the shuttle to stagger and wear down the warp threads.

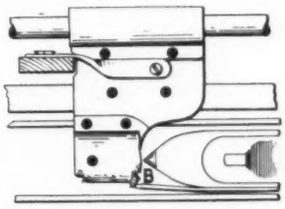


Fig. 2. Two chipped places on the plug of the picker caught the filling at times and pulled it into the box, from which it was doubled back into the cloth by the shuttle.

Rawhide loom pickers are, like any other textile-machine part, subject to accidents. A certain picker had become accidentally chipped as at *B* in Fig. 2. The filling caught on the obstruction two or three times in every yard of cloth and, when freed, was drawn into the shed by the shuttle on the following pick. The weaver was new to the job; and, although she noticed that the surplus filling was doubled in at times, she did not notify the fixer. A half piece was woven before the defect was detected. The doubled ends might have been picked out.

But the piece was ordered put through; and, as luck often has it, this very piece was the one chosen by a garment manufacturer's buyer to inspect. He had originally placed an order for these goods to the value of $500; but he lost interest when he saw the defective double ends reaching nearly a yard into one side of this piece. As a result, he condemned the entire lot. Substitution of the defective piece with a perfect piece or any other plan proposed failed to satisfy him. He said that he would consult with his firm and report the next day. He never reported, never bought the goods, and never placed another order with the mill. It illustrates how a little oversight in weaving on the part of the weaver, the fixer, or the overseer can become an economic loss to the mill.

A case of broken cloth proved puzzling until investigation traced the cause to weaving conditions. The broken state of the texture was not due to any actual severing of the threads at any point, but to a breaking up of portions of their fiber structure. The disturbance could be seen when the cloth was examined against a light.

The firm ordering the goods wanted them heavily fulled. Therefore, they were laid out 70 in. in the loom for a 54-in. finished width. A wool of good felting quality was used in the warp and filling in a blend with 10% cotton and 15% shoddy of fairly good fiber. The cloth was expected to be shrunk 16 in. in width, but it would not shrink much more than half that amount without becoming boardy and verging on the breaking-up condition referred to. Normal fulling ceased when a width of about 60 in. was obtained. After that the fulling was forced by adding stronger soaps and crowding the work along the lines well known to finishers.

An analysis of the layout of the threads of the cloth revealed an exceedingly compact condition of the warp as compared with that of the filling. There were some 60 threads of 8-run yarn to the inch in the warp with only 40 threads of 7½-run yarn to the inch in the filling.

Some member of the technical supervising corps of the mill had erred in laying out the cloth; and in order to get the specified weight, width, and stability he was obliged to prescribe an unbalanced combination of warp and filling yarns in the weaving. The warp yarns had to be fulled, but there was not ample space between them to allow normal fulling. It was like trying to get a quart of water into a pail where there is room for only a pint. When the point of normal fulling was reached, abnormal fulling continued and the warp yarns were pressed closer together, sprung out of alignment, distorted, weakened, and sometimes broken.

The wrecked condition of the fiber structure of the threads was communicated to the cloth structure, resulting in that type of broken cloth which is dreaded by all mill men. Its only disposition usually is through the auction house. The extra ends in the warps in the looms could not be disposed of, but a better equilibrium was obtained between the warp and filling by increasing the number of picks per inch and finishing the goods to 62 in. instead of the regulation width of 54 in. This disposed of the breaking-up feature, and the cloth did not have to go as a job lot.

NEW PRODUCTS AND TECHNIQUES DISCUSSED AT

A.S.M.E. Meeting

PROGRESS in textile engineering, methods for calculating machinery depreciation, and improvements in fulling woolens and worsteds were considered at the annual meeting of the textile division of the American Society of Mechanical Engineers, held Dec. 6, in New York. At a luncheon which followed the business session, Percy Adamson, of Adamson Bros., described the uses of Lastex in textile manufacture. Discussion of the theory and practice of fulling was led by H. C. Riggs, of Riggs & Lombard, Inc.; discussion of textile machinery depreciation, by A. W. Benoit, of Chas. T. Main, Inc. The chairman of the division, Paul A. Merriam, consulting engineer, was presiding officer, and presented the annual progress report of the section.

After outlining the theories underlying fulling and explaining the functions and effect on the finish of heat, pressure, and moisture, Mr. Riggs described recent improvements in fulling equipment and discussed the directions in which future advances probably will be made. Mr. Riggs stated, in part:

Fulling is still more of an art than a science. Few mills know the actual temperatures they are using; and there is room for research to determine the proper temperature for various types of work. The same statement holds true as regards pressure; probably two mills out of three could increase their pressures to advantage; but here again research is needed. In the matter of soap, judgment is once more called into play; and research is needed to determine the best type and amount of soap for each fabric.

Improvements made in the last two or three years in rotary fulling mills have enabled the cutting in half of fulling time, and also have permitted the fulling at one time of twice as many sets as could be done previously. Thus one modern mill does the work of four or five of the older models. It is probable that the present type of rotary mill has gone as far as possible in cutting down fulling time, but it now appears that different types may be developed which will go farther in that direction. In England attempts are being made to employ stocks in conjunction with squeeze rolls and trap of rotary machine.

Mr. Benoit pointed out that there has been a wide variance of opinion as to how depreciation of textile machinery should be figured; what should be included; the proper amounts to apply; and, having arrived at some answer, what should be done with it. An abstract of Mr. Benoit's remarks follows:

Depreciation, he stated, is a composite quantity made up of losses due to age, wear and tear, and obsolescence. The depreciation used is not the sum nor the average, but the greatest of the three. The amount of annual depreciation having been determined, it has various uses: (1) It represents the decrease in value of the physical part of the plant and is deductible from the book value to get the present worth. (2) It is the amount of capital investment which is worn out and is a charge against manufacturing costs. (3) It is the amount which should be set aside as a reserve each year to replace the original machine or its equivalent when it is worn out.

The depreciated value, which is found by deducting the total depreciation from the replacement or orginal cost, gives a figure which may have little or no relation to actual value. Obviously, for cost and accounting purpôses, book values cannot be changed to meet the rapidly fluctuating market values which are prevalent in these times. The depreciation is necessarily based on fair book values as represented by actual experiences for machinery. Many textile plants operating over long periods of years have not made proper provision for the replacement of worn-out machinery by the setting aside of adequate reserves as indicated by the annual amount of depreciation of textile machinery. To insure continuity in business, to preserve the original investment in textile machinery, and to provide for replacements, reserves equal to the accumulated depreciation should be available.

In the annual progress report of the division were listed some 50 innovations and improvements made in textile machinery during the last twelve months. Of particular interest was mention of a method of long-draft spinning direct from card or comb sliver, either in cotton or wool, which while not yet introduced on a commercial basis, seems to be nearing such a stage. This is the Harris system of twisting and drafting simultaneously, in which yarn is drafted between several sets or pairs of roils, which pairs themselves rotate in the plane of their own parallel axes. While the method is as ancient as the hand-operated spinning wheel, and has previously been attempted by machinery, this particular mechanical application, it was stated, is unique and has great possibilities.

In presenting the progress report the committee called attention to the fact that with the prolonged continuation of the depression, the mills were unable to profit to any real extent by machinery developments made in recent years. Thus there was no longer the inducement to go ahead with such mechanical research, and during the last year or two there has been a decided lessening in the amount and importance of textile mechanical progress. However, with textile over-production and over-expansion checked by the various textile codes, and with balanced production and consequently fair prices and profits reestablished, the mills will have resources with which to purchase replacement equipment that will embody the latest developments.

Officers of the division elected for the ensuing year are as follows:

Chairman, Wm. L. Conrad, consulting engineer; vice-chairman, Clifford H. Ramsey, Morrison Machine Co., and A. W. Benoit, Chas. T. Main, Inc.; secretary, Mark A. Goldrick, Jr., Dutchess Bleachery, Inc.; executive committee, Wendell Brown and Harry D. Learned; associates, Reynolds Longfield, Henry M. Burke, Albert Palmer, and Paul A. Merriam.

Limitation of the Use of Machinery

It might be well to mention again the N.R.A., this time with particular reference to the limitation of the use of machinery to 80 hours, and to the limitations of increases in productive capacity. These clauses in the textile codes undoubtedly effect hardships on certain mills which have been designed and organized to operate on the basis of 24 hours per day, and they would appear to shut off the market for the manufacture of productive machinery. However, sooner or later, we have got to call a halt to textile over-production and over-expansion. It is too bad it could not have been done years ago. Without calling such a halt, it is going to be impossible to check the ruinous competition that has so demoralized the industry. With this demoralization checked and with balanced production and consequently fair prices and profit reestablished, the mills will have resources with which to purchase replacement equipment that will embody the latest developments. During the last few years replacement has been out of the question for most mills, and old, obsolete equipment has been kept in production which would long ago have been scrapped had the mills had the ready money with which to do this. Therefore we are hopeful and confident that in the long run these limitation clauses will be a benefit rather than a burden to the manufacturers of textile machinery—From A.S.M.E., Textile Section, Progress Report.

Power Saving Methods

DISCUSSED BY S.T.A. MASTER MECHANICS AT FALL MEETING

ECONOMICAL steam plant operation and methods for reducing power consumption in the mill were discussed at the fall meeting of the master mechanics' section of the Southern Textile Association, at Clemson College, S. C., Nov. 2. E. E. Edmiston, of Mooresville (N. C.) Cotton Mills, chairman of the section, was assisted by David Clark, editor of *Textile Bulletin,* Charlotte, N. C., in conducting the discussion.

Graphic-recording, portable watt meters for determining the power consumption of individual machines were described by E. H. Gilliam, representative of the Esterline-Angus Co., Indianapolis, Ind., who gave examples of their application to specific problems in the textile plant. His talk was illustrated by slides showing graphic charts on which slight variations in power consumption were recorded by the instrument.

Practical research, with the cooperation of textile and engineering schools were considered. This type of research, it was explained, would not be limited to power problems, but would include studies of mechanical and electrical problems in all kinds of textile mills. H. H. Iler, of Union Bleachery, Greenville, S. C., suggested an investigation of the effect of singeing temperatures on the tensile strength of fabrics.

E. E. Edminston, chairman

L. L. Vaughan, professor of mechanical engineering, N. C. State College, Raleigh, N. C., pointing out that many mill purchasing agents buy coal by weight only, with no attention to the amount of ash, moisture, or volatile matter, declared that more mills should purchase coal on B.t.u. basis. In the case of steam plants erected several years ago, he said, often the combustion space between the grate bars and the boiler is too small. This condition can be remedied to some extent, depending on design and arrangement of the boiler-room equipment, by raising the boiler to the required distance above the grate. Charles A. Spencer, power plant engineer, Union Bleachery, of Greenville, told of his experience in lowering the furnace 18 in. This permitted a saving of about 7% in fuel consumption with the old type h.r.t. boiler.

In one steam plant which requires from 75 to 80 cars of coal per year, according to Professor Vaughan, indicating and recording meters for showing combustion conditions were installed. Efficiency of the plant was increased about 22%, and the savings paid for the instruments in one year.

Prof. S. B. Earle, of Clemson College, recommended careful study of coal to be certain it is the most suitable type for the steam-plant equipment. He declared that hand firing is much less efficient than stoker firing and recommended the carbon-dioxide test as one means of checking efficiency. W. H. Leathers, master mechanic, Newberry (S. C.) Cotton Mills, said he followed the policy of buying coal on the B.t.u. basis and this practice, with several other steps to improve conditions, has raised the efficiency of his steam plant materially. Whereas four boilers were required to carry the load originally, after changing from hand firing to stokers only two boilers were employed.

John Fox, electrical engineer, Duke Power Co., Charlotte, N. C., declared that every machine in the mill should be equipped with a test block to facilitate the use of instruments for determining power consumption. Such test blocks on power-driven machines, he pointed out, make it easy to plug in the recording watt meters and other instruments without loss of time. He suggested that all mills study their power-load conditions and try to reduce the maximum demand charge in the case of purchased power. Mr. Fox said further that the friction clutches on looms should be checked to see if they are properly adjusted, as they might otherwise cause excessive power consumption, and suggested that mills try to keep their fire pumps and compressors off the line while the plant is operating.

One speaker stated that his mill saved about 3% in the power consumed by spinning frames merely by cleaning the bolsters. There was an additional slight saving in power as the result of changing to more suitable spindle oil. In the same mill experiments are being undertaken to ascertain if power consumption can be decreased by putting on spinning bands with a special device.

L. W. Misenheimer, master mechanic, Southern Bleachery & Print Works, Inc., Taylors, S. C., reported a saving of about 8% in cost of power-plant operation by changing to a more suitable type of coal, although the price of the new fuel was 15c. per ton higher than that previously used. He said also that investment of $4,000 in equipment to return waste hot water to boilers had increased temperatures and made possible a saving to the mill of $2,810 in one year.

Savings through the elimination of no-load transformer losses, representing about $10 per week on 1,000 looms, were reported by L. M. Kincaid, master mechanic, National Weaving Co., Lowell, N. C., who explained that all that is necessary in this case is to have the watchman throw over the switch as he passes by. In discussing the possibility of driving slashers with a small steam turbine and using the exhaust steam from the turbine for the slashers, Mr. Fox stated that if the output is as much as 20,000 lb. of steam per hour, it is generally economical to install a bleeder turbine and generate power as a byproduct.

The 60-Hour Mill

HOW MILLS PLAN SHIFTS UNDER THE CODE

IF all the active cotton spindles ran the full two shifts allowed under the NRA, the volume of production would be more than 25% greater than the annual average for the ten years started in 1921. Such a schedule is obviously impossible for the industry. It is equally impossible that the present demand for goods should be met by a very nice division, whereby about one-half the mills would run two shifts all the time while the other half would run only a single shift. Certainly a considerable number of cotton mills are now faced with the problem of having a normal volume of business that calls for operation somewhere between a single shift of 40 hours and a double shift of 80 hours. The problem is equally in evidence in the wool industry where it is probable that average operation of about 60 hours per week will be ample to meet the demand.

Of all the plans put forward to govern mills that have a volume of business sufficient to justify operation somewhere between 40 and 80 hours a week, the plan which seems to offer the most advantages is to curtail productive equipment. To make the matter clear, let us suppose a mill of 2,400 looms that can secure enough business to run these 2,400 looms 60 hours per week. Such a mill is not going to cut down to a single shift of 40 hours, neither is it going to go out into the highways and byways and secure enough business at cut prices to run 80 hours—that is if it is wise. The best plan that has been devised for such a mill is to run two shifts of 40 hours each, but to run only 1,800 looms for the 80 hours. The production under such a schedule is, of course, the same as running 2,400 looms for 60 hours per week.

By and large, the textile industry has too much equipment even under a machine limitation of 80 hours per week. Such limitation of productive machinery as was discussed in the last paragraph is, therefore, theoretically sound. To name but a few of the many alternative proposals, we have:

1. Run one full shift and as much of a second shift as business justifies.

2. Divide the work by rotation between the two shifts. Thus, one shift might work 40 hours the first week and 20 hours the second, and the other shift the reverse.

3. Divide the work equally between the shifts, each shift working 30 hrs.

It is interesting to see what has worked out in practice. In the New Bedford and Fall River section most mills with orders for more than one shift work 80 hours with productive equipment cut down to conform to demand. The mills in these sections, due to the Massachusetts laws, could not operate more than 48 hours per week under the old régime. (The laws of the State forbid the working of women after 6 p.m. and thus preclude a second shift except in the case of the tire-fabric mills and certain other units that can run men at night.) The amelioration of the Massachusetts' law to allow the working of women until 10 p.m. and the NRA have benefited mills in the New England section and two-shift operation is now not uncommon—but such two-shift operation is based on reduced operation of productive equipment to conform with demand. The problem of securing additional workers is not serious in industrial centers.

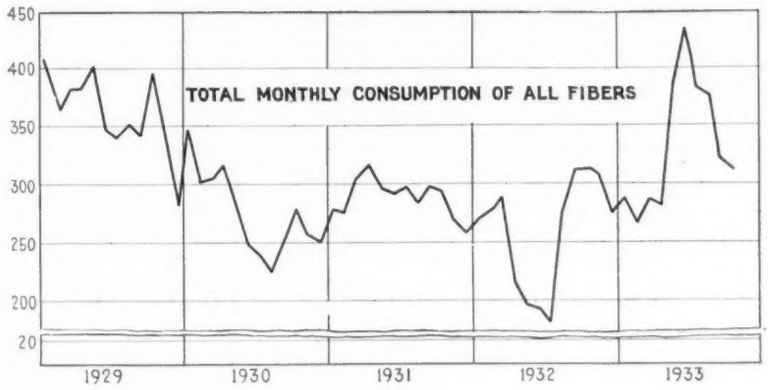
The situation in the South is something else again. Most of the mills in this section always figured to run two shifts—probably averaging about 110 hours per week. Due to competition, for a number of years many mills were not able to attain any such schedule, but that was at least the goal. Conditions changed radically under the NRA and we have the following factual set-up.

1. Mills that consistently ran two shifts in the old days—Such mills continue to run on the same basis and if business gets particularly flat they shut down completely for a week or more. Such mills, if they are located in the country, already have a two-shift village.

2. Mills that ran only one shift of, say, 50-60 hours in the past—Unless such a mill is located in an industrial center of the South, the problem of securing workers is a serious one. Most mills in country sections do not want to build additional mill village facilities under present circumstances, and they are faced with the problem of either cutting down to 40 hours per week or of finding additional workers somewhere for a second shift. By far the most interesting approach to a solution has been to interest farmers in the surrounding area in mill work. Under present schedules, shifts change about 3 p.m. The farmer can either work his farm until 3 p.m. (in the winter months particularly chores are lighter) or he can leave the mill in mid-afternoon. The automobile makes transportation easy. Under NRA operation the textile worker will have far more time next summer to devote to his own small vegetable garden—if he has one—and thus achieve a greater measure of self-sufficiency.

Textile World Analyst

WHAT HAS HAPPENED IN TEXTILES UNDER CODES AND TAXES



WHAT has happened to the textile industry since the codes and processing taxes went into effect?

The picture tells the story. It shows the trend of general textile activity, based on total monthly consumption of raw material, from 1929 through October of this year, the last month for which official statistics are available at this writing. It reveals no such pathetic degeneration as critics of the recovery program have pictured.

True, the curve sought a dizzy height in June, due to advance buying in anticipation of the codes and taxes; true, also, it dropped back in two stages, receding first to the July-August level, and then to the Sepember-October level. However, it is significant to note that the June peak was not so much above the level which was fairly "normal" back in 1929; also that, even after the recession which followed this summer, the September-Ocober level was still on a par with the peak activity of the previous three years. Furthermore, since there is no indication of undue stock accumulations at first hand, this represents business actually done by the mills.

October's textile activity was practically the same as that of October, last year (½ of 1% over, in fact), and was only 6% under the average October during the eight year period, 1924-31, roughly assumed by us as "normal." The activity of the first 10 months of this year was 32% in excess of that of the same period last year; and about 5% over the first 10 months of the eight-year average just mentioned.

Through the cooperation of chambers of commerce in certain textile cities, it is possible to report progress well into November, on the assumption that these centers may be representative of the industry as a whole. It will be recalled that we stated, in the October issue of this publication, that textile mill payrolls in New Bedford increased 137% between May 6 and Aug. 5, and then decreased about 10% from Aug. 5 to Sept. 9. Bringing this information up to a later date, there was an increase of 8% in these payrolls from Sept. 9 to Oct. 14, but this increase was lost during the period from Oct. 14 to Nov. 18. Consequently the figure on the last-named date was practically the same as that of Sept. 9, and only about 10% under the peak in August.

In Fall River, textile payrolls increased 91% between May 6 and Aug. 12, the summer peak; declined 23% between Aug. 12 and Sept. 16; but then started to rise again, and on Oct. 28 reached a new peak 97½% above the May 6 figure. There was a slight decline during the succeeding weeks but for the week ending Nov. 25, textile payrolls were still 80% above May 6.

In Lowell, the number of people employed in industry in general increased 53% from the end of May to the end of August, and in September declined only 3% from the peak, and only 6% from the peak in October.

Unfortunately, the price story does not make as good reading as the production story. It will be noted from Tables I and II that margins on carded cotton yarns and fabrics, for example, have continued to shrink. On the former, they are back to where they were between June and July, while on the latter they are in the May-June zone.

This bears out the statements made by Ralph E. Loper at the Cotton-Textile Institute meeting in October, and again at the North Carolina Cotton Manufacturers meeting in November. At the former he stated that a cost study of five groups of cotton products showed on Oct. 7 an average yield of only 1.6% on investment at replacement costs. Speaking a month later, he stated that on these same groups on Nov. 9, the industry was not only earning nothing on its investment, but was earning only a small part of the depreciation upon its plant.

That is something to think about.

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	15.3	March, 1933...	10.2
October, 1931..	13.3	April, 1933.....	11.4
January, 1932..	12.1	May, 1933.....	15.6
June, 1932.....	9.5	June, 1933.....	20.6
July, 1932.....	9.1	July, 1933.....	23.4
August, 1932..	11.1	August, 1933...	21.4
September, 1932	13.0	September, 1933	19.5
October, 1932..	12.6	October, 1933...	19.1
November, 1932	10.7	November, 1933	17.7
December, 1932	10.6	Nov. 8.....	17.8
January, 1933..	10.4	Nov. 15	17.6
February, 1933.	10.1	Nov. 22.....	17.7
		Nov. 29	17.5

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
July, 1931.....	12.6	March, 1933....	9.8
October, 1931..	12.7	April, 1933.....	10.1
January, 1932..	10.9	May, 1933.....	12.3
June, 1932.....	9.9	June, 1933.....	15.4
July, 1932.....	9.6	July, 1933.....	23.2
August, 1932...	9.7	August, 1933...	23.5
September,1932	12.8	September, 1933	21.3
October, 1932..	12.3	October, 1933...	20.0
November,1932	11.3	November, 1933	18.4
December, 1932	10.9	Nov. 8.....	18.6
January, 1933..	10.2	Nov. 15.....	18.7
February, 1933.	9.4	Nov. 22.....	18.3
		Nov. 29	17.9

Textile World's Price Index Numbers

Date	Cotton Index Numbers: Cotton	Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Silk Index: Raw Silk
July 31, 1914..	100	100	100	100	100	100	100	100	100
Jan. 1933.....	50	72	67	100	76	85	105	125	29
Feb. 1933.....	48	68	65	95	75	83	102	125	26
Mar. 1933.....	49	70	66	96	75	84	102	125	26
Apr. 1933.....	56	74	72	97	78	90	104	125	29
May 1933.....	69	93	94	101	104	113	116	169	34
June 1933.....	76	109	117	112	122	139	135	192	47
July 1933.....	86	138	135	131	134	153	156	201	50
Aug. 1933.....	110	170	151	147	136	157	159	217	41
Sept. 1933	111	156	149	147	144	177	165	222*	41
Oct. 1933.....	110	152	141	144	148	179	175	222	36
Nov. 1933....	114	146	132	144	150	179	175	222	33

Note: All cotton indices since Aug. 1 include processing tax. * Revised

THE PERSONAL PAGE

Elroy Curtis, who joined Southeastern Cottons, Inc., in June as vice-president, has been elected president of the company. He succeeds **Donald Comer** who has held the office since the resignation of **Frederick H. Payne** last summer.

James W. Cox, Jr. has resigned as president of Sibley Mfg. Co. and Enterprise Mfg. Co., both of Augusta, Ga., effective not later than the time of the annual meetings of these companies, Feb. 14, 1934. **Lanier Branson**, president of Graniteville (S. C.) Mfg. Co. will also assume the presidency of Sibley and Enterprise. Prior to Mr. Cox's connection with these mills, he was head of Cox, Fuller & Mauersberger, New York, textile manufacturing consultants. He had previously had experience in practically every branch of the textile industry.

Allen G. Shaw has been appointed treasurer of the Booth Mfg. Co., New Bedford, succeeding **Henry Otte.** Mr. Shaw is also treasurer of the H. & B. American Machine Co., Pawtucket, R. I., and it is understood that he will divide his time between the two plants.

Robert L. Studley, of Studley & Emery, Boston, was elected president of the Boston Wool Trade Association at the annual meeting Nov. 21, succeeding **Robert L. Turnbull. Durham Jones,** of Hallowell, Jones & Donald was elected vice-president, and **Nathaniel Perkins,** who has been treasurer for many years, was unanimously re-elected.

Daniel F. Edwards, president, Saco-Lowell Shops, Boston, has been named chairman of an eight-man committee set up by the Chamber of Commerce of the U. S., Washington, to confer on NRA administration matters with the committee recently named by the Advisory Council of the Department of Commerce. Also on Mr. Edward's committee is **John A. Law,** president, Saxon Mills, Spartanburg, S. C.

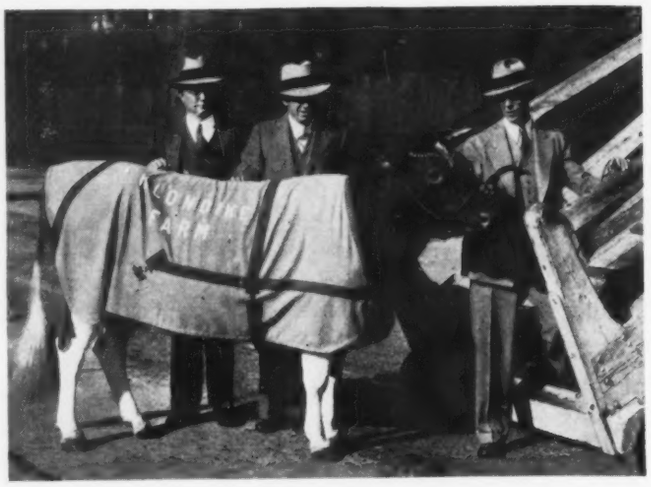
Allyn B. McIntire, vice-president of the Pepperell Mfg. Co., Boston, Mass., has been elected president of the Association of National Advertisers.

J. W. Proctor, formerly with Wellington Sears Co., New York, has been appointed an executive assistant on the staff of the Cotton-Textile Institute. He will provide additional assistance to **George A. Sloan,** president, in dealing with group problems and with certain aspects of the processing tax and code administration. His appointment involves no changes in the existing staff of the Institute.

George P. Entwistle recently resigned as president of Pee Dee Mfg. Co., Rockingham, N. C., but will continue to act as treasurer until such time as he can be relieved of full responsibility.

Harry T. Rounds, former president of Sussex Print Works, Newton, N. J., is now managing director of Traphagen Commercial Textile Studio, New York.

In addition to the appointment of **Herbert Morrow** and **W. S. Nicholson** as deputy administrators, NRA, noted in last month's issue, announcement has been made of the appointment of **Herbert B. Ludlum** as deputy administrator in charge of knit goods.



Thurmond Chatham Lends Registered Guernsey to Byrd Expedition--"Nira," or more formally Klondike Gay Carteret, dressed in blanket tailored from product of her owner's mill, the Chatham Mfg. Co., Winston - Salem, N. C., at the gang plank of Admiral Byrd's supply ship. Left to right: H. C. Bates, American Guernsey Cattle Club; Thurmond Chatham owner of the farm, breeder of prize cattle and blanket manufacturer; Ruohs Pyron, manager of Klondike Farm, Elkin, N. C.

Douglas B. Coates has been appointed superintendent of the Farwell Bleachery, Lawrence, Mass., succeeding the late **James Sims. William E. Schmottlach,** former boss dyer, moves up to the position of assistant superintendent, his place as boss dyer being taken by **Raymond Warner.**

Charles W. Hill has been appointed assistant agent at the Willimantic, Conn., mills of the American Thread Co. **George W. Hickey** succeeds Mr. Hill as superintendent of the finishing department and Mr. Hickey's former post as head of the order and service departments will be filled by **Henry E. Costello. Walter R. Britland**, assistant superintendent of the manufacturing department, has been transferred to the company's Westerly, R. I., plant.

Arthur R. Thompson, Jr., recently resigned as superintendent of the North Carolina Finishing Co., Salisbury, N. C., to accept a position with the southern sales and technical staff of the Ciba Co., attached to the Greensboro (N. C.) office, but with headquarters in Charlotte, N. C. He has been succeeded in his former position by **W. F. Robertson.**

A. L. Hill, of Burlington, N. C., will represent Jno. Dunlop's Sons Co., New York, in the Carolinas, according to an announcement made by **B. H. H. Noble,** executive vice-president of the company.

Walter F. Easter recently resigned as superintendent of Angle Silk Mills, Inc., Rocky Mount, Va., to accept a similar position with Hillcrest Silk Mills, High Point, N. C., which is now a unit of the Carolina Cotton & Woolen Mills Co., Spray, N. C.

J. W. Roberts has been promoted from overseer of weaving to the superintendency of Angle Silk Mills, Inc., Rocky Mount, Va., being succeeded by **W. B. Hagler,** formerly with Carl Stohn, Inc., Charlotte, N. C.

Harry Greene, Quinebaug Co., Danielson, Conn., was elected president of the Eastern Connecticut Mills Association at the annual meeting of the organization.

J. Allen Carey has joined the sales department of the Ervin Yarn Co., Philadelphia.

M. L. Leopold has joined the worsted yarn department of the Malina Co., New York.

Obituary

W. F. Hutcheson, aged 82, president of the Peerless Woolen Co., Rossville, Ga., and president of the Mountain City Knitting Mills, Chattanooga, Tenn., died in Chattanooga on Nov. 6.

Frederick B. Gordon, aged 76, founder of the Columbus (Ga.) Mfg. Co. in 1900 and president until last year, died in Atlanta on Nov. 4.

Henry C. Finch, aged 65, president of the Broadalbin (N. Y.) Knitting Co., died at his home in that city last month following a brief illness.

John F. Reardon, aged 64, agent of the Grosvenor-Dale (Conn.) Co., died on Nov. 29.

Arthur Land, aged 64, until two years ago secretary of Alexander Smith & Sons Carpet Co., Yonkers, N. Y., and associated with the company for over 40 years, died at his home there on Nov. 21.

Thomas T. Turner, aged 64, treasurer of the Washington Mills Co., Mayodan, N. C., died recently.

August M. Blepp, aged 75, founder of the Blepp Knitting Co., Cleveland, O., died at his home in Lakewood, a suburb, Nov. 6.

R. E. West, former master mechanic of Arcadia Mills, Spartanburg, S. C., and active in the Southern Textile Association, died at his home, Nov. 18.

Ben W. Montgomery, aged 58, former president of Drayton Mills, Spartanburg, S. C., and assistant treasurer, Pacolet (S. C.) Mfg. Co., died Nov. 15.

John Dakin, aged 60, owner of Dakin Knitting Mills, Milton, Pa., died recently.

Edwin C. Gibson, vice-president and general manager of Linen Thread Co., New York, associated with that company for 60 years, died Dec. 3.

R. E. Zwicker, aged 76, founder of Zwicker Knitting Mills, Appleton, Wis., but retired for 15 years, died at Eagle River, Wis., recently.

Benj. B. Underhill, New York agent for Ramapo Finishing Corp., Sloatsburg, N. Y., died Dec. 2.

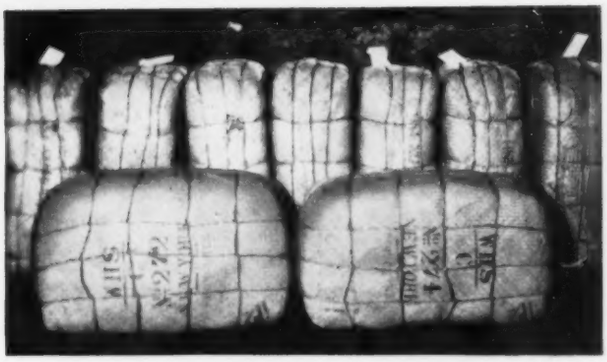
A Eugene Brady, vice-president and treasurer, Jenkins Bros., valves, New York, with whom he had been associated for 40 years, died Nov. 4.

Throwing Illustrated

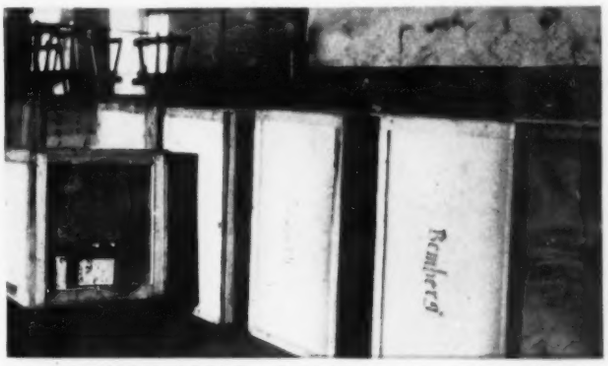
WITH REFERENCE TO CHANGES CAUSED BY PIECE-DYEING TREND AND RAYON

By A. Weiss
Manager, DuBois (Pa.) Silk Throwing Co.

CONTINUED development of piece-goods dyeing since the start of the World War has made possible mass production of silks and allied fabrics. It has also made possible, through the use of crepe twists, fabric effects not attainable with the tram and organzine twists used in yarn-dyed cloths. This change from the older method of skein dyeing has had two far-reaching results for the throwing industry. First, it has caused complete revamping of throwing machinery and throwing processes in order to produce accuracy of twist, uniformity of yarn tension, and extreme cleanliness required for piece dyes. Second, it has opened to throwsters the vast field of rayon, which has been commercially developed and expanded during the same period. If skein-dyeing methods had been continued, not one pound of rayon would ever have been seen inside a throwing plant. In this trip-on-paper through a throwing plant evidence of the two influences referred to will be apparent.



1 RAW-SILK BALES. *The bales slide down a chute from the mill yard directly into the vault, where they are weighed, cataloged, and stored. Canton bales weigh approximately 106 lb.; Japan bales, 134 lb.; Caucasian, 134 lb.; China, 143 lb.; Italian 220 lb.; Tussah, 143 lb.*



2 RAYON CASES. *Practically all rayon is shipped to the throwster by the rayon manufacturer in plywood cases which, when filled, weigh 220 lb.*

3 OPENING RAW-SILK BOOKS. *Spreading the skeins previous to wrapping in nets for soaking. Rayon skeins are handled similarly.*

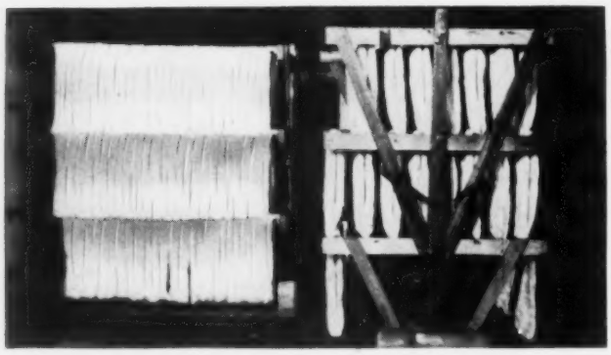
4 SOAKING. *Silk in this plant is soaked over night in a cold emulsion of sulphonated olive oil and water, which softens the gum and lubricates the thread. Rayon is soaked for 20 min. in a hot bath (note steam hoses) of coconut oil or paste preparations containing beeswax, plus a small amount of edible gelatin. The soaking serves to bind the rayon filaments together, prevent chafing, and facilitate twist setting.*

5 EXTRACTING. *Silk and rayon require different timings, because of differences in their hygroscopic properties. (For same reason, they should not be stored or processed under same atmospheric conditions.)*

6 OPENING SKEINS. *A machine with eccentric reel opens the skeins gently without disturbing the arrangement of the reeled threads.*

7 FILLING SKEIN TRUCK FOR DRYER. *Polished wooden rods filled with skeins are hung on the truck.*

8 PUSHING TRUCK INTO DRYER. *Dry, hot air continuously replaces moisture laden air. Under good conditions, skeins dry in about 6 hr.*

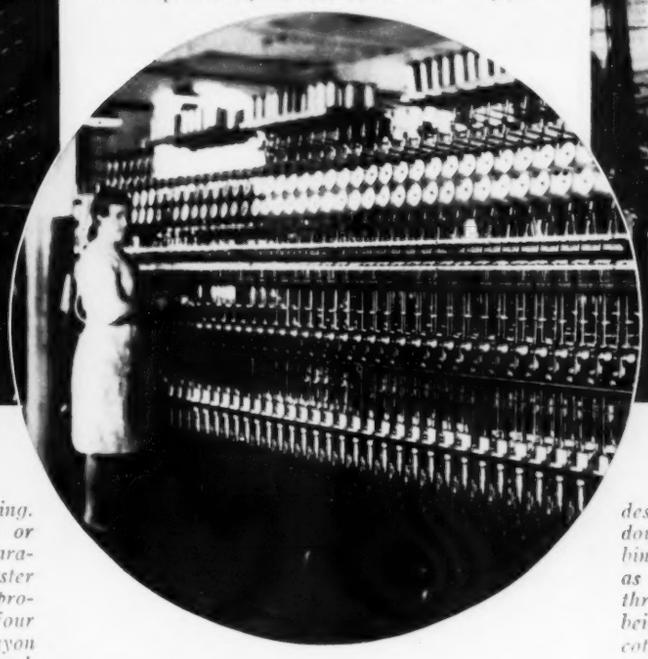


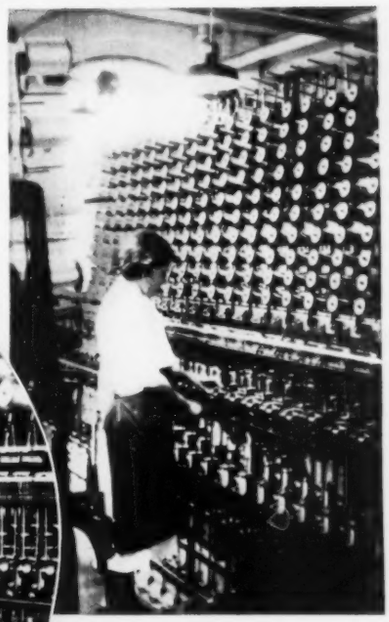
9 AIR-CONDITIONING YARN. *Natural moisture regain takes place as trucks stand on winding-department floor awaiting removal of skeins.*

10 SKEIN WINDING. *Transfers yarn from skein to bobbin. Silk and rayon skeins differ from each other in size, and irregularities occur in both sizes. Hence the readily adjustable wire swifts are preferred to the older wooden swifts.*

11 SKEIN-WINDING RAYON ON COTTON SPOOLER. *Machine is "converted" for the purpose. Cotton mills term this "spooling"; silk mills, "winding." For rayon a much lower relative humidity is desirable than for silk.*

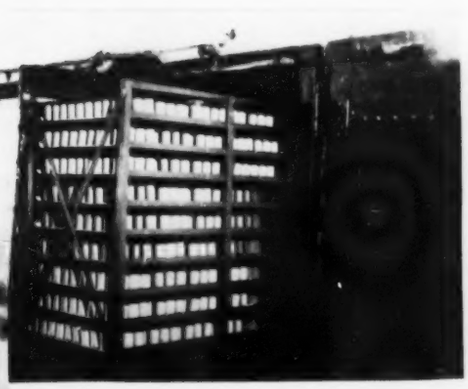
13 DOUBLER-TWISTING. *Combining several threads into one low-twist yarn, in this case producing 2-thread, 20/22-denier, 3-turn yarn preparatory to crepe twisting. About the highest twist given on the doubler-twister is ten turns. Since the process from standpoint of quality is most important and requires efficient operatives and supervision, it is best conducted in daytime.*



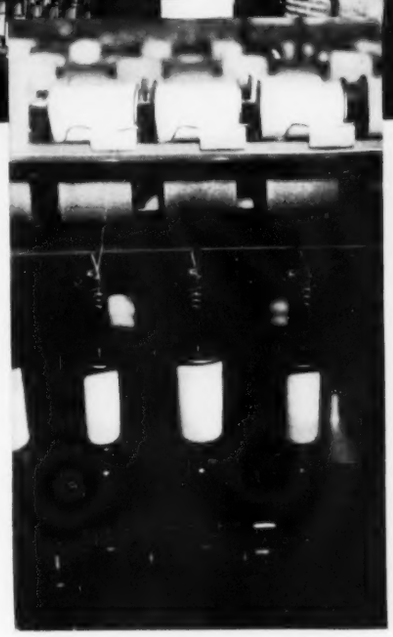


12 SPOOLING RAYON FROM CONES. *Practice of shipping rayon on cones is growing. Where rayon producer sizes or tints the rayon, all yarn-preparatory processes of the throwster are eliminated and spooler production is increased three or four times. Improvement in cone rayon may make this practice standard.*

14 PLYING RAYON AND COTTON. *Because rayon comes in any desired size, it is not run on the doubler-twister except in combination with another fiber, such as silk or cotton. In this picture three ends of 150-denier rayon are being plied with one-end of 50s cotton.*



15 TWISTING OR SPINNING. *This process adds twist to the silk from the doubler-twister or to the rayon from the winder. Twist accuracy has recently been improved by driving the take-up shaft directly from the spindle belt, eliminating any error from belt slippage. Every twisting or spinning spindle in this plant is checked for speed three times a week by means of a tachometer or stroboscope. A constant check on twist is made with the aid of a tester on wheels. Because flyers are cut rapidly by silk and are oxidized by rayon, in this plant a new flyer is used for each new bobbin, the flyers being manufactured by the plant itself. The term "throwing" is derived from the ancient Anglo-Saxon word "thrawan," meaning "to twist."*

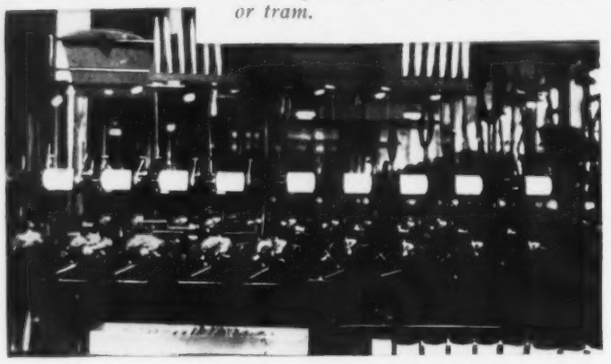


16 ORGANZINE SPINNING. *Twisting singles.*

17 ENTERING STEAM CHEST. *Inside, the trucks stand on a track over a basin of water through which water vapor bubbles. The resulting moisture in the air sets the twist in the crepe yarn. Experience has taught that several short periods of steaming alternated with periods of conditioning produce a better setting than one long steaming. A suitable conditioning period, the length depending on the size and kind of crepe, lies between steaming and redrawing.*

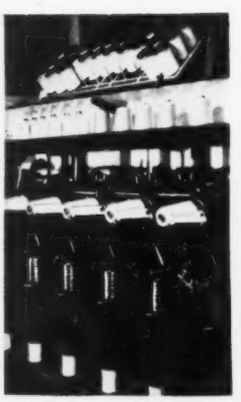
18 REDRAWING. *Winding from perforated steaming bobbins to shipping bobbins. The setting of the thread clearers on redraw frames is a serious problem for the conscientious throwster. In this operation well-run throwing plants employ the weaver's knot exclusively. Free rotation of the spindle holding the unwinding steaming bobbin has been found to reduce trouble from varying tension.*

19 REELING AND LACING. *In this step are produced the finished skeins of silk organzine or tram.*



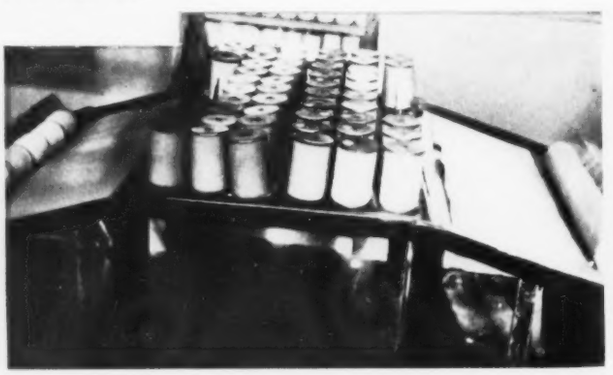
20 COPPING. *Winding silk into bunch-builder cops for use by weaving mills as filling on the loom.*

22 SHIPPING ROOM. *Examining, counting, weighing, and shipping thousands of bobbins of silk and rayon each day require accuracy and dispatch. Tare figures require standard bobbins and a daily weighing of all incoming empties—the latter precaution permitting an adjustment of the tare figure to suit the current average.*



21 CONING. *Winding silk hosiery tram in cones for the knitter.*

23 INSPECTING AND WRAPPING. *Girls preparing silk or rayon crepe yarn for insertion in packing cases. Final weighing is of completed cases.*



24 WRAPPING TABLE. *A close-up of the specially designed table shown in picture 23.*

AN EMBOSSED EFFECT in pale blue taffeta using Eastman acetate yarn in both warp and filling. The versatility of Eastman yarn is well demonstrated by the new group of novel fabrics now being displayed by A. M. Tenney Associates, 171 Madison Ave., New York. Sales Agent for Tennessee Eastman Corp., Subsidiary Eastman Kodak Co.

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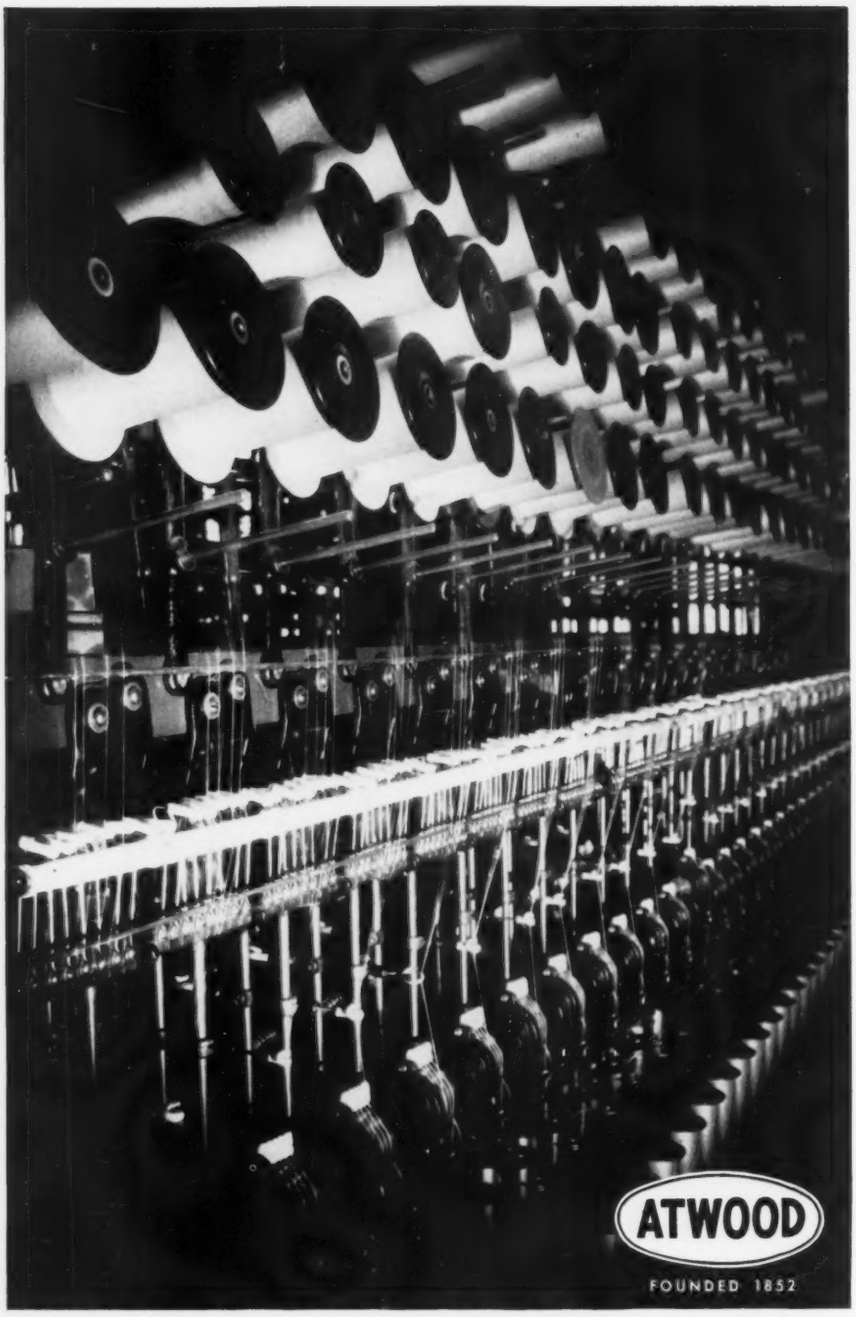
51



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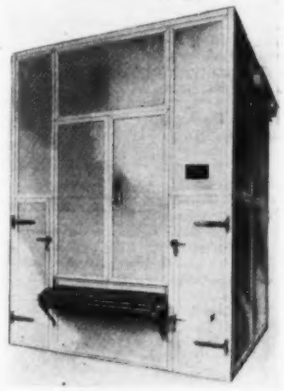
ATWOOD MACHINES PRODUCE THE BULK OF AMERICA'S SILK AND RAYON YARNS

NEW MACHINERY & PROCESSES

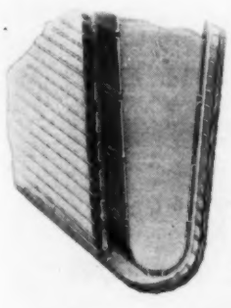
Multipass Air-Lay Dryer

Offering an entirely new principle of drying, Proctor & Schwartz, Inc., Philadelphia, recently announced the "Multipass Air-Lay" dryer for handling materials in continuous sheet, web, strip, or string form. The material is carried in a series of passes upward and downward through the drying chamber, as shown in the accompanying diagram, being held to the continuous conveyor mechanism by the pressure differential between adjacent air compartments. Thus, the material is held flat with no tension



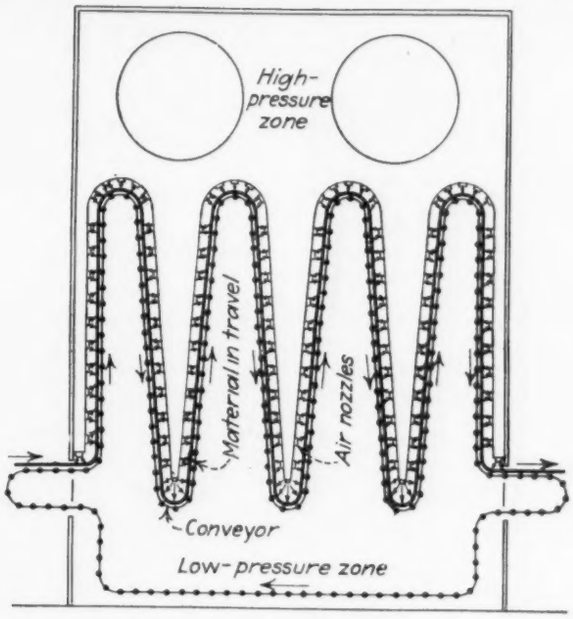
while drying, under the "air-lay" principle the air serving the double purpose of drying the cloth, and helping to carry it. Nothing but air touches the upper face of the material.

The housing consists of a structural steel framework, closed in by panels and doors of heavy sheet metal, the entire unit being effectively insulated. The main enclosure is divided into two air chambers by an air diffuser which follows exactly the contour of the conveyor path. This diffuser consists of a series of air ducts with nozzle-like openings through which the air passes from the high-pressure chamber above the cloth to the low-pressure chamber below the path of the conveyor. The diffuser is designed to give uniform distribution of air over the material,



the currents of air striking the cloth at close range at right angles to the path of travel, thus holding the material against the conveyor rods.

The conveyor mechanism consists of a series of strong, light rods or girts, spaced well apart and carried by parallel runs of sprocket-driven chain. Extensions of this conveyor outside the enclosure at the ends, as shown in the accompanying illustration, provide for feed and delivery of the cloth. The arrangement is readily adapted to receiving the material from wound rolls, folds on trucks, squeeze rolls on wetting tanks, coating machines, etc., and delivering to folding, winding, and similar apparatus.



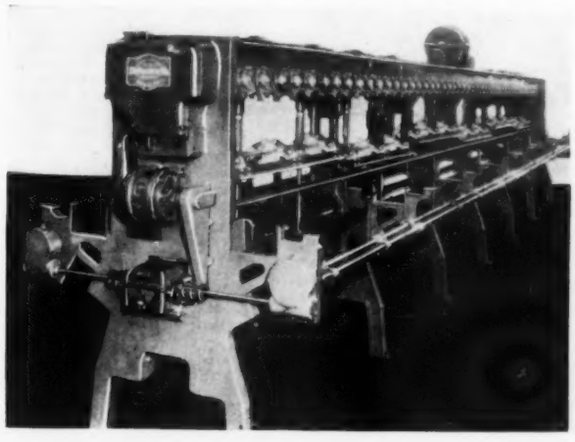
After the air has passed from the high- to the low-pressure chamber, it is reheated by means of coils, and returned to the high-pressure chamber to repeat its cycle. Design of the machine permits the exhaust of moisture laden air from the enclosure and a corresponding intake of fresh air to maintain uniform drying conditions. Fans located on both sides of the unit are arranged to force circulation from the high-pressure chamber downward through the material. The makers state that the dryer is adaptable to a wide variety of fabrics, including dyed, finished, printed and washed goods, and impregnated, rubberized, and coated materials.

High-Speed Rayon Pot-Spinning Machine

H. W. Butterworth & Sons Co., Philadelphia, recently announced an improved rayon pot-spinning machine with high speed traverse action and other new features. The faster traverse produces an open basket wind which is said to permit easier washing, de-sulphuring, and bleaching in cake form. All working parts of the machine are totally enclosed, run in oil, and are automatically lubricated. There is a P. I. V. compensator, which also runs in oil, to permit changing production from one denier to another.

Another feature is the funnel mechanism which allows the entire section, consisting of eight funnels, to be raised at one time, thus eliminating the necessity of funnel adjustment and providing uniformity of funnel setting. The traverse is designed for speeds ranging from 20 to 60 strokes per minute. Traverse bars are in the center of the machine, totally encased, and protected from acid attack. All moving parts of the traverse mechanism, subject to wear, are made of hardened tool steel. Construction of the Godet wheels is such that they can be removed or replaced while the machine is operating. The Godet speeds are adjustable to accommodate any take-off speed from approximately 50 to 100 meters. The pump drive shaft is of worm and worm wheel construction, completely enclosed, and runs in oil. Bronze castings are of a special acid-resisting type, while all other castings are made of Meehanite iron. Provision is made for mounting pumps and pump drivers under an apron extending from the spinning bath compartment, so as to afford protection against any direct splash or drip.

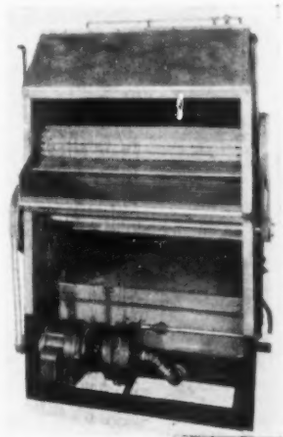
Structural steel is used to support all ducts and the spinning bath compartment. Motor mountings are adjustable to take care of any type of motor. No cams are required on the entire machine. The makers state that the construction of the machine permits high take-off speeds and that any number of motor positions can be operated or shut down as desired.



Yarn Conditioning Machine

For conditioning filling yarn, Bowers & Barksdale, 905 Bernina Ave., N. E., Atlanta, Ga., have developed a new machine, known as the "Twist-Setter," which sprays the conditioning fluid on yarn as it passes along on a specially designed conveyor. The yarn is placed in the machine at a level of about 20 in. above the floor and is discharged directly into trucks for immediate delivery to the looms. The machine is equipped with a heavy water-tight copper reservoir for collecting spray which is not absorbed by the yarn. Immediately over this reservoir is a copper screen which filters the solution, collecting dirt and trash removed from the bobbins. The screen is arranged to permit easy cleaning.

The machine stands on a heavy wooden platform made of cypress. The driving mechanism consists of a 1-hp. motor directly connected to a centrifugal pump, with a shaft extension to drive the conveyor with a V-belt. Moving parts have been reduced to a minimum, heavy copper and brass have been extensively used in the construction, while all steel parts have been given a rust-proofing treatment. Ball bearings have been used throughout. The floor space required is 10x5 ft. Production of the machine



is from 3,000 to 5,000 lb. per hour, depending upon the method of feeding, while any suitable conditioning fluid may be used with cold water for setting the twist. A smaller size, having a capacity of 1,000 to 2,000 lb. per hour, is also available.

Non-Reciprocating Loom

An ingenious continuously operating positive-motion loom has been developed by K. Mutter, Triptis, Thuringia, Germany. Although the first model, at least, is apparently of little commercial value, the development is interesting as suggesting another possible way in which the often-criticized reciprocation of present-day looms may eventually be supplanted.

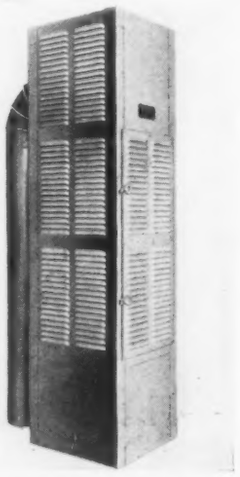
Thirty-two or more shuttles, which lie parallel to the warp threads and are little more than spindles, flow continuously through the warp about 8 in. apart, returning from one selvage to the other above the warp. The shuttles in the shed are propelled positively by a worm extending across the loom

below the warp and having a groove sufficiently deep to permit the ends of the lower shed to sink into it. The shed is changed continuously between shuttles by means of cams controlling small groups of independently operating heddles. A row of cam-shaped disks provides a continuous beat-up. In order that the shuttle-driving worm will not carry the warp threads to one side, each spiral consists of a separate disk, the disks being close enough together to drive the shuttles positively while permitting the ends to lie undisturbed between them.

A serious disadvantage is that each pick must be cut off, although automatically, at the selvage. The present speed, which is independent of loom width, is 60 picks per minute.

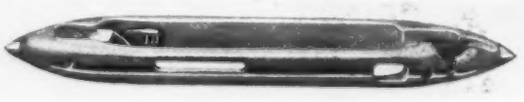
Recirculating Air Filter

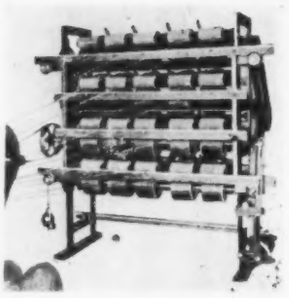
The adaptation of the recirculating air filter to cloth room equipment has been announced by Saco-Lowell Shops, Boston. This filter was first developed



for opening and picker room installations and the principle on which it functions—that of retaining lint and dust, and exhausting the filtered air back into the room—has been described. The apparatus consists of a fireproof framework, over which are stretched two metal screens slightly separated from each other. Outside these screens are steel casings with louvres of such form as to permit unobstructed exhaust of air in a downward current. During the course of operation a loosely felted sheet of lint is formed between the inner and outer screens, and all air must pass through this before leaving the filter.

According to the makers of the equipment, a filter installed in one mill to handle the dust from a 40-in. brushing machine with fan capacity of 3,400 cu. ft. per min. has shown that no appreciable amount of dust escapes the filter and that it is necessary to clean the filter but once in three weeks. The apparatus has also been installed for use with a large Hermas shearing machine with air capacity of 5,250 cu. ft. per min. The major advantage claimed for the recirculating filter in the cloth room is the saving in heating costs and in maintaining proper humidity.

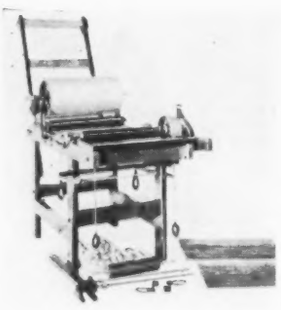




Tape Spooling and Blocking Machines

Fidelity Machine Co., Philadelphia, which acquired the Jacob K. Altemus Co. early this year, has announced several improvements and refinements in Fidelity-Altemus winding equipment. The tape spooling machine shown above is of the pressure-drum type and is available in sizes to wind as many as 28 spools simultaneously. This multiple-end spooling machine, designed for handling either braids or tapes, operates in connection with a measuring roll so that any desired length can be wound. The machine is equipped with either cam or screw traverse, depending upon the class of work to be done, while winding is at a constant speed through a friction drive. It is recommended by the makers for use in connection with calendering machines.

The blocking machine, illustrated below, is designed for winding tapes or braids into rolls of 3, 9, 12, 18, 24, and 36 yd. lengths or over. For the usual width of braid 28 ends can be wound simultaneously. There is an automatic stop motion which can be set to wind the lengths noted above. The machine can be furnished with either direct motor drive or pulley for belt drive. Materials can be wound without centers, on paper centers, or single-width spools, as desired.

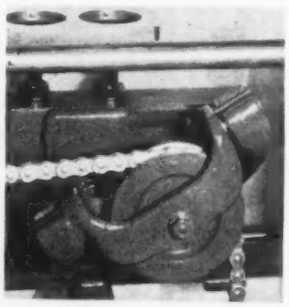


Shuttle With Improved Spring End

Draper Corp., Hopedale, Mass., has developed a shuttle with a new type of spring end designed to eliminate trouble from loose and broken springs. Changes have been made in the shape and length of the spring, and in the method of locking. As this requires less cutting away of the wooden block, the shuttle block has been strengthened at the spring end. The new springs cannot be used in old blocks. The makers state that in testing on a machine arranged to duplicate the action of bobbin transfers, the new spring did not break or work loose, although it was opened and closed two and a half million times.

Builder Motion

For spinning frames and twisters with long traverse, Whitin Machine Works, Whitinsville, Mass., has announced a builder-motion chain-pulley hanger and swivel of different design. A single hanger longitudinally adjustable is attached to the side rail and is easily movable to prevent interference with spindle tapes, regardless of side-rail settings. The swivel is placed at an angle to afford greatest chain length. Gudgeons are carefully machined in line and rest in bearings milled in the supporting bracket. This arrangement permits the builder-chain pulley to be raised to extreme height in relation to the builder motion. When used



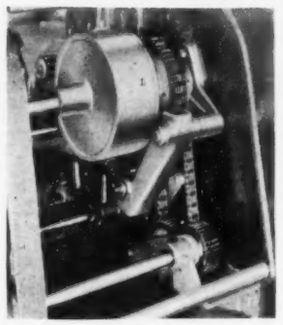
in conjunction wiith the combination builder, according to the makers, it is a simple operation to move the bracket lengthwise on the side rail to line up the chain either with the rack or with the filling lever of the combination builder. This allows the chain to act most favorably on the builder motion.

Vertical Design Variable-Speed Unit

Variable-speed transmission of vertical design, completely enclosed, has been developed by Reeves Pulley Co., Columbus, Ind. This unit is recommended for upright installations of limited space and low horsepower requirements. The cast-iron case protects operating parts from such destructive elements as water, chemical fumes, abrasives, etc. The unit is equipped with centralized force-feed lubrication system and is of compact design. Speed adjustments are provided for in ranges from 2:1 to 6:1. Capacity, ⅛- to ⅜-hp.

Roving-Frame Improvements

A spur-gear compound for roving frames, said to provide uniform tension, has been developed by Saco-Lowell Shops, 147 Milk St., Boston. The compound rotates in the same direction as the main shaft, thus reducing the friction between them, and the planetary train of gears runs in an oil bath, the mechanism being totally encased. A simple arrangement



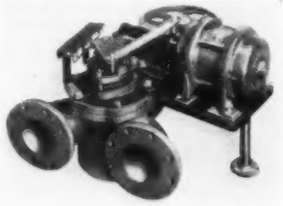
has been devised which employs but one planetary pinion gear, mounted in ball bearings and accurately counterbalanced. Provision is made for drainage of old oil, if desired, before refilling. The compound is said to require lubrication only three or four times a year.

Advantages claimed by the makers are: elimination of slippage, because less load is thrown on the cone belt; uniform tension on roving throughout the entire build of the bobbin; lower power consumption; less friction; and smoother operation.

Another improvement on roving frames made by Saco-Lowell Shops is a redesigned bobbin-driving mechanism, known as the "horsehead," which is arranged with chain drive to eliminate the "gain and loss" of the frame, or the amount which the bobbins actually turn during the traverse without any corresponding motion of the spindles and rolls. By eliminating this undesirable rolling action, it is said that considerable stretching of the roving is avoided, and at the same time operation of the frame is made quieter and smoother by the substitution of a silent chain for the train of gears previously used. Also, as an additional improvement, the spindle-driving gears in the head end have been replaced by a chain drive. This is said to eliminate all the troubles of the large intermediate gear formerly used. These improvements are standard equipment on new frames, and can be applied to any old type frame of Saco-Lowell manufacture.

Automatic Dye Reversing Valves

For application to Franklin jackspool dye machines, Charles E. Bean Co., Stafford Springs, Conn., has announced an automatic time and valve control which operates the reversing pressure valve at predetermined intervals. The valve-operating unit consists of a standard, totally enclosed 1-hp., three-phase motor; a worm driven gear, and a slidable switch. There is no reversing action in the motor. A half revolution of the wheel opens the valve one way; the other half revolution opens it the other way. The slidable switch and the remote-control time switch, on dyeing time, are series connected, both operating



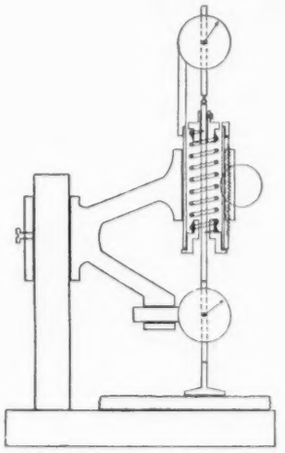
AND PROCESSES

the magnetic switch which starts and stops the motor. The entire operating unit is mounted directly on the valve as shown in accompanying illustration.

The remote-control time-operating unit, which may be installed in the boss dyer's office if desired, consists of two bronze gears (or dials) operated by standard gear reduction units equipped with Timken roller bearings. At the end of each dial is a switch unit. No. 1 dial is for the scouring operation and has fixed time, 10 min. "in" and 10 min. "out," while the No. 2 dial can be regulated to provide any time from 1 to 10 min. in either direction. One remote-control time-operating unit will take care of one or a battery of Franklin jackspool machines, but each machine must have its individual valve-operating unit. The major advantages claimed for these automatic controls are that they insure even dyeing and effect considerable saving in the operator's time.

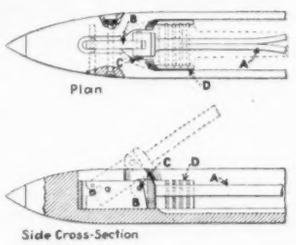
Determines Fabric Compressibility

For measuring the thickness, compressibility, and resilience of textiles and similar materials, an instrument has been developed at the U. S. Bureau of Standards and described by Herbert F. Schiefer in a recent issue of the Bureau of Standards Journal. This device, known as the compressometer, is arranged so that the pressure applied to the specimen by the foot of the machine is indicated on a dial micrometer and the corresponding thickness of the specimen on a second dial micrometer. As shown in the accompanying illustration, the specimen is placed upon the anvil, and is subjected to pressure from the foot, which is circular in shape and 1 in. in diameter. This foot is attached to the spindle of the lower dial micrometer. By turning the knob at the right the mechanical foot may be lowered upon the specimen. The amount of pressure being applied is indicated upon the upper dial, which is controlled by the elongation of a spring in the center tube. The distance between the face of the foot and the anvil, or the thickness of the specimen is indicated on the lower dial. Both dials are graduated to read directly to 0.001 in. Readings may be taken first under increasing pressures and then under decreasing pressures. The instrument has been used for evaluating the compression and recovery of rug underlays, blankets, felts, pile fabrics and various other knitted and woven materials.



Two-Purpose Shuttle

In order that it will be unnecessary for silk mills operating both automatic and non-automatic looms to keep in stock two types of quills and shuttles, A. Guldemann, of I. A. Hall & Co., Paterson, N. J., has developed a shuttle capable of holding the automatic-loom quill in



a manner suitable for either type of loom. As shown in the accompanying diagrams, a spindle (*A*) is mounted on a raisable tongue (*B*) and may be detached by release of a pin (*C*). The grooved springs (*D*) for holding the rings of automatic-loom quills are a permanent fixture of the shuttle. The usual difficulty in inserting or removing a ringed quill by hand where it is gripped by springs is overcome in the case of non-automatic work by the leverage which the spindle (*A*), used only for non-automatic weaving, provides.

Rayon Spinning Pot

Designed for operating speeds between 7,200 and 10,000 r.p.m., a 7-in. rayon spinning pot of reinforced Textolite laminated

material has been developed by General Electric Co., Plastics Dept., West Lynn, Mass. This pot consists of a shell, molded as a unit with a hub of another grade of Textolite, the shell structure being reinforced by a banding of protected steel wire of high tensile strength wound under tension. The distribution of the steel banding wire, the size of which is determined by the speed for which the pot is designed, is shown in the accompanying illustration. The wire is protected against corrosion, while a secondary protection is the covering of the Textolite laminated material which, of itself, is said to be extremely resistant to attack by the acid of the spinning bath.

Rubber Belt for Silk and Rayon Spinners

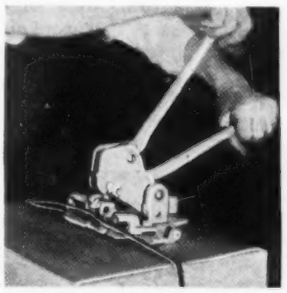
Development of a special rubber belt for silk and rayon spinners or twisters is announced by B. F. Goodrich Rubber Co., Akron, Ohio. Claims for this belt, which is designed to be made endless on the job, include an extremely high flexibility and elasticity and a low permanent stretch. The new belt is intended to insure uniform speed and twist, even when employed on machines having small pulleys, half turns, and high speeds.

Tests reported by the manufacturer show that 1,000 belts which have been running under mill conditions for eight months to a year have given satisfactory service on every known type of spinner. Goodrich officials assert that present users of the new spinner belt report no shedding of rubber or peeling off at the outer plies.

Coincident with the development of the belt was the compounding of a cement said to be 150% stronger than earlier types. At the same time, at the instigation of the Goodrich company, a large builder of vulcanizing equipment designed a sturdy, compact vulcanizer. The manufacturer of the belt recommends the new cement and vulcanizer for making the belt endless on the job.

Box-Strapping Tool

For increased speed in box strapping operations, the Acme Steel Co., 2834 Archer Ave.,



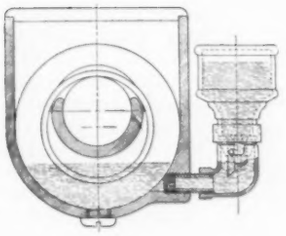
Chicago, has developed an improved box-strapping tool with automatic seal feed. This device, known as the "Steelstrapper," tensions the strap, applies a seal, seals the joint, and cuts the strap from the coil. Operations are controlled from two ball-tipped levers—one for tensioning the strap and the other for sealing. The clip for the automatic seal feed contains 100 seals.

New Meter Design

Republic Flow Meters Co., Chicago, has redesigned its line of flow meters and is now utilizing a new method of assembling the actuating elements. The actuating unit is built into a metal cartridge which is compact and protects the elements from dirt, moisture, and abuse. The pen adjustment is now accessible from the front of the instrument.

Constant Level Oiler

Speedway Mfg. Co., Cicero, Ill., has introduced a constant level oiler for application to ring oiled bearings, waste pack bearings, or anti-friction bearings. The oil level in the bearing is held at the same height as the



opening of the short tube in the inverted bottle cap. As soon as the oil gets below this level, air enters the jar through this tube and oil flows out through the long tube until the level is raised enough to re-seal the opening in the short tube. Advantages cited for this type oiler are that it maintains constant oil level, reduces time required in oiling, prevents waste of oil, and supply is always visible.

Pure Asbestos Yarn

Manufacture of pure asbestos yarn containing no cotton, is said to be facilitated by a new ring doffer developed by Ernest L. Cady, 75 Prospect Ave., Hartford, Conn. An important difficulty in carding pure asbestos has been the unsatisfactory removal of the fiber from the doffer needles. In Mr. Cady's invention small rods or wires lying between the needles and across the rings of the doffer are made to rise at the proper time and force the fiber out. The eccentric mechanism for operating the wires is located between the rings. The invention may prove applicable to the carding of other types of short fiber.

Recording Potentiometer Pyrometer

A recording potentiometer pyrometer recently announced by The Foxboro (Mass.) Co. is featured by a balancing mechanism, which is so designed that it produces a large movement of the pen or print wheel for a small galvanometer deflection, and moves the printing mechanism from one end of the scale to the other in a minimum time, without requiring an extremely fast cycle. The balancing mechanism consists essentially of a V-shaped drive cam and a friction roller. The recorder is housed in a fume-tight and dust-proof case.

Universal Gear Puller

Armstrong-Bray & Co., 312 North Sheldon St., Chicago, recently announced an improved "Steelgrip" universal puller for gears and pulleys, having greater range of effective application. The new tool consists of a heavy bracket with large pulling screw and three chains of any desired length. The pullers are available in two sizes: pulling capacities of 6,000 or 24,000 lb.

NEW PUBLICATIONS

DISTRIBUTION TODAY; by O. Fred Rost; Whittlesey House, McGraw-Hill Book Co., Inc., New York; $3.00.

If any textile manufacturer has ever doubted that distribution is one of his major management functions, the experiences of the last few years must have dispelled that doubt. "Basically every major problem of distribution originates with the manufacturer," states the author of this book; "therefore every important corrective measure, of necessity, must originate with the manufacturer." As an aid toward that end, he presents the information needed by the business man who wishes to analyze his distribution system and to select those agencies and policies that will improve results and reduce costs. Drawing on his long personal contact with all branches of distributive activities, Mr. Rost —who is marketing editor of *Business Week*—gives a simple, clear description of those functions, agencies, processes and policies that have been found usable, effective and economical in actual practice. A special section is devoted to cost elements and price problems, and attention is given to the influence of the NIRA on the topics discussed. Straight-forward, practical business language is used throughout the book.

FUNDAMENTALS OF FIBER STRUCTURE; by W. T. Astbury; Oxford University Press, New York; $3.00.

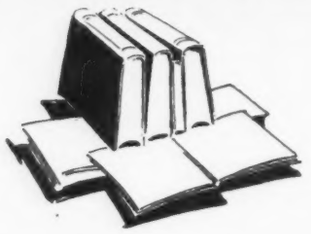
No textile man who wishes to keep abreast of the newer knowledge of the properties of textiles can afford to forego a reading of Mr. Astbury's book. Based on a course of six lectures given to Yorkshire textile students and operatives, this volume in the simplest possible terms tells the story of modern research in textile fibers. Presenting inside information on textiles—much of it made known by the author's own investigations, and appearing in no other text book—this publication deserves a place in every textile library. It tells for the first time in plain English what textile fibers really are, and why they act as they do.

SOME FUNDAMENTALS OF ASSOCIATION ADVERTISING PROCEDURE; By F. J. Ross; Published by Fuller & Smith & Ross, Inc., New York.

The author emphasizes the value of an associational advertising campaign for keeping an industry's product before the public at a low proportional cost per member, and then outlines the methods to be followed in a campaign of this nature. In developing his theme, Mr. Ross points out the need for business associations and shows that close cooperation is necessary for the solution of the internal problems of an industry. He then discusses campaign procedure, including the setting up of a campaign headquarters and staff to attend to matters pertaining to traffic, legislation, raw materials, manufacturing standards, trade practices, credit, statistics, and conventions.

COTTON YEAR BOOK OF THE NEW YORK COTTON EXCHANGE, 1933; prepared under direction of Alston H. Garside, economist of the Exchange; $2.00.

This, the sixth Year Book of the New York Cotton Exchange, contains practically all the series of statistics given in the fifth Year Book, extended to cover the



1932-33 season, with considerable additional data. It gives a comprehensive picture of the world supply and distribution of American and foreign growths of cotton; prices of cotton, yarns and cloth; mill activity, and other data of interest from a cotton market standpoint. It is significant to note from the introductory article that the outstanding feature of the 1932-33 cotton season was the cessation of the accumulation of excessive stocks of cotton. The trend was opposite to that of the three previous seasons, and definite progress was made toward a normal supply position.

METHODS AND PROCEDURE IN FEDERAL PURCHASING; By R. J. Monteith and A. S. Burack; Published by Bruce Humphries, Inc., Boston, Mass. Price, $10.

To the manufacturer interested in selling more goods and extending sales of his products to new markets the United States Government, purchaser annually of 100,000 different kinds of articles valued at $1,000,000,000, presents a worthy customer. The present volume presents clearly and comprehensively a summary of the essential data required by the manufacturer who wishes to exploit this market.

PROCEDURE HANDBOOK OF ARC WELDING DESIGN AND PRACTICE; Lincoln Electric Co., Cleveland, Ohio; 434 pages: $1.50.

The book contains about 500 illustrations and drawings, was prepared for all welders, heads of welding departments, and those responsible for the design of products which may be built by welding.

Business Literature

Steam Turbines. General Electric Co., Schenectady, N. Y. Booklet describing steam turbines for the mechanical drive of pumps, fans, compressors, blowers, pulverizers, stokers and other industrial equipment.

Rayon Conditioning. Quaker Products Corp., Conshohocken, Pa. Technical Bulletin RC2 discussing conditioning of rayon crepe yarns preparatory to throwing.

Monel Metal. International Nickel Co., Inc., New York. Technical Bulletin T-5 containing engineering data on the physical constants, strength and ductility, corrosion resistance, working properties and composition of Monel metal.

Chemicals. Hercules Powder Co., Wilmington, Del. Article on "The Textile Industry" in *The Hercules Mixer* describing some textile uses for Hercules products.

Picking Equipment. Whitin Machine Works, Whitinsville, Mass. Illustrated circular showing the savings in horsepower made possible by the installation of one-process pickers.

Water Heaters. General Electric Co., Schenectady, N. Y. Bulletin describing automatic electric water heaters for industrial use, designed to provide hot water at the exact spot where needed.

Anti-Friction Bearings. Hyatt Roller Bearing Co., Harrison, N. J. Bulletin on anti-friction bearings as applied to spinning, drawing and twisting frames, showing details of how roller bearings can be installed to replace plain babbit bearings.

Dyestuffs. General Dyestuffs Corp., New York. Color card showing principal shades for wool blankets produced with acid and palatine fast colors which, besides the good fastness to stoving, are said to possess also the fastness to milling and washing required by the trade.

Chemicals. Hercules Powder Co., Wilmington, Del. Booklet entitled "The Growth of a Modern Hercules" which contains an interesting history of the company and describes the manufacture of some of its chemical products.

Linestarters. Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa. Leaflet on combination linestarters for squirrel cage and wound rotor induction motors.

Metal Coating. Metallizing Co. of America, Inc., Los Angeles, Calif. Booklet describing the "metallizing" process, its applications, advantages, and accessory equipment. Treatment for prevention of corrosion in textile machinery includes mercerizing ranges, size kettles, wet finishing rolls, dye kettles and starch mixing kettles.

Welding. The Linde Air Products Co., New York. Illustrated booklet, "Oxwelding for General Maintenance," describes use of the oxy-acetylene process of welding and cutting in reclamation of broken and worn machine parts.

Motors. Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa. Illustrated circular on "Thermoguard" motors which contain thermostatic device for protecting them against overheating and overloading.

Water Treatment. Hagan Corp., Pittsburgh, Pa. Booklet on the Hall system of boiler water conditioning for the prevention of scale, and protection against corrosion, wet steam, and embrittlement.

Belting Care. E. F. Houghton & Co., Philadelphia. Wall chart 24x36 in. giving instructions on how and when to dress belting, belt fastenings, how to lace a belt, how to put on a belt, selecting width for any drive, calculating pulley ratios, figuring speeds, etc.

Dyestuffs. General Dyestuff Corp., New York. Color card showing Palatine fast dyestuffs on slubbing especially suitable for dyeing slubbing for hosiery, sweaters and bathing suits.

Thermometers and Gauges. Brown Instrument Co., Philadelphia. Illustrated catalog (No. 6702) presenting the complete Brown line of thermometers and pressure gauges for various industrial installations.

Floor Machines. Hild Floor Machine Co., Chicago. Pamphlet showing floor machine for scrubbing, polishing, waxing, sanding and grinding on floor surfaces.

Scientific Instruments. Pfaltz & Bauer, Inc., New York. Group of pamphlets on instruments made by C. Reichert, Vienna, Austria, covering various forms of microscopic and allied apparatus.

Dyestuffs. Carbic Color & Chemical Co., Inc., New York. Pattern card showing Indigosol prints on cotton material with colors shown printed in two depths. Details are given for various methods now in use and the degree of fastness to light, washing and chlorine.

Dyestuffs. General Dyestuff Corp., New York. Pattern card showing Algosol dyestuffs printed on cotton goods and detailed formula for printing these dyestuffs according to the steam process, nitrite process, bichromate process and other methods.

Finishing Machinery. James Hunter Machine Co., North Adams, Mass. September issue of *The Hunter Counselor* containing articles on finishing plant problems.

Automatic Controls. Northern Equipment Co., Erie, Pa. Catalog of "Copes" flow level and pressure controls, including reducing valves and fuel cut-out devices.

Couplings. Farrel-Birmingham Co., Inc., Buffalo, N. Y. Illustrated bulletin on "Gearflex" design double engagement type couplings with list of sizes and capacities and information for ordering.

Dyestuffs. General Dyestuff Corp., New York. Circular describing the principal processes in which the fiber protecting properties of the different "Protectol" products can be utilized.

Synthetic Products Show Is Proposed

With the aim of educating the public in the scientific significance and quality of synthetic manufactures, consideration is being given by a group of manufacturers to the staging of a synthetic products show at the Rockefeller Center, New York, in February under the auspices of the Fashion Group. That group has appointed a committee, of which Miss Marion Taylor, fashion editor of *Vogue,* is chairman, which has discussed the idea with representatives of leading synthetic industries. Final decision regarding the project is expected to be made at a meeting in New York Dec. 18.

The plan would be to limit the show to such types of synthetic products as are bought by women consumers in department stores. Textiles, of course, would be an outstanding division; other products would be wood, metals, jewelry and plastics.

Bradford-Durfee Alumni Meet

The New York Alumni Section of the Bradford-Durfee Textile School met Dec. 5. A paper dealing with the manufacture of cotton from raw to dyed and finished state was presented by a committee. This paper will be delivered at the school in the near future.

Textile Calendar

Silk Assn. of America, Annual Dinner, Waldorf-Astoria, New York, Jan. 18, 1934.

Second Knitwear Industrial Exposition, Grand Central Palace, New York, Feb. 12 to 16, 1934.

National Knitted Outerwear Association, annual meeting, New York, during week Feb. 12 to 16, 1934.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 23 to 27, 1934.

National Cotton Week, May 14-19, 1934.

Southern Textile Exposition, Eleventh Annual Exhibit, Textile Hall, Greenville, S. C., Oct. 15 to 20, 1934.

Home Market Club Elects

The Home Market Club held its 46th annual meeting at its offices in Boston, Nov. 15, and reelected Sinclair Weeks as president. Mr. Weeks is Mayor of Newton, Mass., and president of Reed & Barton Corp. and of the United-Car Fastener Corp. Among the textile men reelected vice-presidents are Henry F. Lippitt, Louis B. Goodall, Horace A. Carter, Homer Gage, Harold C. Whitman, Chas. E. Riley and Edward L. Martin. Textile members of the executive committee include E. Kent. Swift, Franklin W. Hobbs, Nathaniel F. Ayer and Robert A. Leeson. Textile men elected directors for three years include Frank H. Metcalf, Nathan Durfee and E. H. Killheffer.

Code Authority for Machinery Manufacturers

The following code authority to administer the code for the textile machinery manufacturing industry was elected at a meeting under the auspices of the National Association of Textile Machinery Manufacturers:

David F. Edwards (chairman), Saco-Lowell Shops; John F. Tinsley, (vice-chairman), Crompton & Knowles Loom Works, Worcester, Mass.; William H. Cliff, (secretary), 38 Chauncey Street, Boston; E. Kent Swift, Whitin Machine Works, Whitinsville, Mass.; B. H. Bristow Draper, Draper Corp., Hopedale, Mass.; Parkman D. Howe, Universal Winding Co., Boston; S. F. Rockwell, Davis & Furber Machine Co., North Andover, Mass.; J. J. Kaufmann, Steel Heddle Co., Philadelphia; E. H. Pierce, Atwood Machine Co., Stonington, Conn., and J. E. Butterworth, H. W. Butterworth & Sons, Co., Philadelphia.

BUSINESS NEWS

Union Special Machine Co., Chicago, has expanded its sales and service activities. A new sales division embracing territory covered by offices in Chicago and Atlanta, Ga., is now under supervision of A. E. Brauch with headquarters in Chicago. Mr. Brauch is succeeded as manager of the Chicago sales office by T. C. Wiebers. A. J. Feigel now heads the sales promotion department where he previously served as assistant to Mr. Wiebers. A new service department has been organized under Robert Taubert to supplement the various branch offices in taking care of orders from customers for all spare parts and needles. G. C. Cooper, previously manager of the sales office in Philadelphia, has been assigned to research work on coordination of machines with products for the purpose of securing greater efficiency and economy for customers. Mr. Cooper is succeeded by T. M. Murphy.

C. E. Murray Co., industrial and management engineers specializing in the textile industry, with offices at 551 Fifth Ave., New York, was established as of Dec. 1, by Clyde E. Murray who has been engaged for the last four years as consultant in the finishing industry.

Louis Allis Co., Milwaukee, Wis., has appointed the following sales representatives: Robert B. Soderberg for the state of Connecticut with headquarters at 196 Palm Street, Hartford; N. O. Lawyer, working out of the company's New York office at 50 Church Street.

Morse Chain Co., Division of Borg-Warner Corp. has acquired the Kelpo free-wheeling or one-way industrial clutch, formerly a product of Kelpo Clutch Co., Rockford, Ill. In the future, this clutch will be manufactured at the Ithaca plant of the Morse Chain Co. and will be sold by Morse representatives. Fred M. Potgieter, formerly president of Kelpo Clutch Co., has joined the Morse organization.

Albert Birch, president of **Birch Bros., Inc.,** Somerville, Mass., textile dyeing and finishing machinery, celebrated a half-century in the business this month. On Dec. 4, 1883, Mr. Birch, then 19 years of age, arrived in Boston and immediately located on Oliver St. to act as agent for his father William Birch, of Manchester, England, who was the inventor of many opening, stretching, guiding and sewing machines used in the finishing industry. Several years later Mr. Birch erected a factory at Somerville where his three sons are now associated with him.

W. J. Westaway Co., Ltd., Hamilton, Ont., Canada, has recently been appointed exclusive agent in Canada for the Metropolitan Sewing Corp. of Canada, makers of mill sewing machines.

Frank Mossberg, president of **Mossberg Pressed Steel Co.,** Attleboro, Mass., is the subject of a biographical sketch appearing in a recent issue of the *Attleboro Sun.* The sketch was No. 1 of a series on leading business men and manufacturers in the section covered by that newspaper.

Standard Textile Chemical Co., with plant at Conshohocken, Pa., has been incorporated in New York State by Charles W. Carvin, a throwster. Office will be maintained at 450 Seventh Ave., New York, and laboratory at 114 East 32d St., New York. At the start the company will concentrate on sizing and related materials. B. L. Hathorne, consulting textile chemist, has been developing sizing compounds for the firm and is retained to continue work on these and other products.

The Public Service Association of Ohio has organized the "Silver Seal Service" for the trucking industry with general offices at Sidney, Ohio. It offers a variety of services, including a staff of motor cycle officers and armed guards for protection of silk, textile and other shipments between any two points in the United States.

Tyson Roller Bearing Corp., Massillon, Ohio, through its representative, has been granted a patent by the British government on the Tyson cageless tapered roller bearing.

Combustion Engineering Co. has appointed James Cleary manager of Philadelphia sales district. Fred L. Farrell has been appointed manager of the New England sales territory, and G. O. French has been engaged as sales engineer specializing on fire-tube boilers and special shop work.

Revere Copper & Brass, Inc., has appointed Robert G. Scott as a vice-president, in charge of the Taunton-New Bedford Division with headquarters at Taunton, Mass. Mr. Scott has been associated with the company since its inception in 1929, and was previously connected with the Rome Brass & Copper Co. and Baltimore Copper Mills, both of which are now part of Revere.

Overseers'

THIS DEPARTMENT—

offers a new subject for discussion each month and gives readers' comments on problems introduced in previous issues. The subject opened in October is closed and summary of contributed ideas is given on opposite page. Overseers and others are invited to discuss the subject presented under the heading "About Mistakes and Arguments," and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

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ABOUT MISTAKES AND

"WHAT'S the trouble, Bill?" Superintendent Chase asked as the overseers settled down for the meeting. "You look pretty gloomy."

"I am gloomy," Bill replied. "I just had to let a man go in my department and you know how much I hate to do that."

"What happened?" Superintendent Chase inquired.

"This fellow," said Bill, "made a bad bull and spoiled quite a lot of material. Then, to make matters worse, he started talking back to me when I told him he had made a mess of things. It seemed to me that the only thing I could do was to tell him that he was through."

"We have all been up against such a proposition," Pete spoke up, "and I think it would be helpful if we told our views. That is, of course, if Bill doesn't mind if we happen to disagree with him."

"As a matter of fact," Bill replied, "I'd like to hear what you have to say. I'm too old to think that I always do right, and I don't mind being proved wrong. However, I think I had pretty strong reasons for letting this man go. In the first place, he got careless and made a bad mistake that cost the company a lot of money. I don't like to have people in my department who make bad mistakes. In the second place, this man went up in the air when I tried to give him blazes for being careless. He gave me a lot of back-talk. If I'm going to have discipline in my department I have to be the boss, and if I let such things go on I'd have

Qualifications of an Efficiency Engineer

Editor, Overseers' Round-Table:

The following actual cases, of which the writer had first-hand experience, leave little question as to the necessity of knowledge of both manufacturing and selling details, if any type of engineering system is to be competently installed.

Case No. 1 involved a chain of mills manufacturing a diversified line. The engineering problem was to balance the partly and completely finished stocks in such a way that inventory would be at minimum. After a lengthy survey, the engineers (no previous experience in textiles) announced that it would be necessary to curtail, by about 60%, one of the larger units, a spinning mill of about 100,000 spindles. Despite the urgings of the engineers for haste, it took about three months to run out the stock in process and put the plan into effect. At this stage the trade demand changed and full operation of the stopped machinery became urgently necessary. Another three months elapsed before this could be accomplished.

Net result was a direct increase in wage costs of about $9,000, owing to the fact that labor charges could not be cut down as rapidly as production during the stopping period, nor production stepped up as quickly as wages during resumption. In addition, there was poor work and many cancellations because of inability to deliver on time. Every well-informed textile executive fully appreciates the desirability of reducing stock-carrying charges, but he also knows that if he does not meet his customer's requirements he will soon lose his customer.

Case No. 2 concerned several textile mills that were allied, but operated under different managements; objective was a standard cost system. The experts selected to install the system had previously confined their efforts to industries other than textiles. It was estimated that several months would be required to complete the standardization. After ten months, standard labor costs for yarn products were arrived at. They showed direct and indirect wages, and fixed and variable costs for all processes of yarn manufacture, but unfortunately they also showed that fine count yarns cost less to produce than coarse counts. As this was contrary to all previous knowledge, it naturally caused some adverse criticism, and before the installation period had elapsed the experts in question passed on to other fields of endeavor. D.S.

Editor, Overseers' Round-Table:

The question of whether an efficiency engineer should be familiar with manufacturing details strikes at the heart of the reason efficiency men find so much animosity to their work. I believe there are two reasons operatives resent the appearance of efficiency engineers:

1. The operative feels that these men are an excuse for a reduction in rates. Whether this is true depends upon the use the mill puts to the engineers' report.

2. The operatives resent the audacity of some-one outside the industry showing them how to do their job better. Now this feeling can be broken down if the efficiency engineer can successfully show the operative that he knows the job he is studying.

THOS. D. FERGUSON.

Editor, Overseers' Round-Table:

The man who aims to couple the science of textiles with that of efficiency must, to produce the most economical and beneficial results, be an expert in both fields. It is true that some men's viewpoints may become warped from too close application to the practical end of textile manufacturing. But it is equally true that this allegation holds in inverted form: a man who is solely an efficiency expert may also be the victim of distorted vision.

Effective, efficient mill control depends upon three things:

1. A thorough knowledge of the sequence of operations, the machinery used in manufacture, and the relative importance of each process.

2. A clear insight into such factors as complete and concise mill records, accurate cost accounting, and special merchandising requirements.

3. Ability to diagnose deficiencies in either of the above divisions and to apply common-sense remedies to them.

HOWARD P. GALLOWAY.

Editor, Overseers' Round-Table:

There are certain things that must be learned through experience. An engineer may be grounded in the fundamentals and he may know the basic principles of good management, but unless his knowledge is coupled with practical knowledge gained through experience, he is seriously handicapped when acting in an advisory capacity.

Usually, when the engineer or efficiency man is called in, there is a problem to be

Round-Table

ARGUMENTS

an argument on my hands every time I tried to tell one of the workers something. As I said, I hate to let a man go, but I don't see what else I could have done in this case."

"I'm inclined to look at such things this way," Pete said. "If a fellow has been in my department for some time I rate him as a pretty good worker, otherwise he wouldn't be there. If such a man makes a mistake and you point out to him just what it means, I don't think that he is going to make the same mistake again. If I let him go and get a new man, it will cost money to train the new man and he may fall into the same mistake as the first. As far as talking back is concerned, of course no one can put up with a man who does that all the time. On the other hand, we all have off days, and we should make allowances for this. I should imagine that the fellow Bill speaks of wasn't feeling right up to snuff and that he got upset when he made the bull. Then, when Bill came along and started to give him a dressing down, the fellow sort-of blew up and talked back as he wouldn't do ordinarily. I'm inclined to think that you shouldn't fire a man for his first bad mistake even if he does talk back. If he keeps on being careless, that's something else, of course."

How would *you* handle the case of a worker who made a bad mistake and then talked back to you?

SUMMARY

EFFICIENCY EXPERTS. The question whether or not it was best to employ efficiency experts well versed in textile practices brought forth a record number of replies. Approximately 77% of the contributors stated that much time and money would be saved by employing only such engineers as specialized in textiles. Another 14% believed that there was an advantage in employing outsiders with fresh viewpoints. The remaining 9% stated that individual circumstances should dictate the decision.

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solved. The management is puzzled about something, so it turns to an outside agency for help. A man, or a group of men, who has never been in the plant, or perhaps in a plant like it, comes upon the scene. It is to be expected that for the first few days they walk through the plant, acquainting themselves with the routine. Then there are discussions with the foremen, superintendents, managers, etc. All the obvious shortcomings of the plant are pointed out in report No. 1. The shortcomings being obvious, the management knew about them at the start. Then suggestions which only an inexperienced man would make are incorporated in report No. 2. In my experience the final wind-up of these surveys is that the management asks for the bill, and charges the amount to experience.

The solution of the problems is then turned over to men on the company payroll, who, if relieved of petty detail and permitted to use their time and knowledge in studying plant problems, know the answers. S. N. SELMAN.

Editor, Overseers' Round-Table:

The words "efficiency engineer" bring to my mind a number of horrible examples I have run across in the last 15 years in diverse industries. I was under the impression that this individual was eliminating, along with the crude production-control-board and other folderol of the early 20's. But perhaps a few have managed to get by. With a stop watch, a thick skull and no conscience this "genus homo" certainly stirred things up, and woe be to the unfortunate manufacturer who had him on the payroll.

Seriously though, it seems to me the successful industrial engineer of today would do well to stick to certain groups.

With a personal background of 17 years' experience in everything from machine shops to candy factories I feel that I can do the most good in needle, cut-up and clothing trades because 80% of my time has been spent in this type of manufacturing and naturally a client benefits most by reason of this fact.

While there may be the "exception," who can jump from a steel mill to an embroidery plant and do a fair job, yet it seems to me he would do much better if he followed up one or the other.

J. M. MURPHY.

Editor, Overseers' Round-Table:

If the engineer works in a well-equipped and well-managed mill, and is given full cooperation, he will not need to have a background of textile experience to attain good results. But if the engineer is blocked on every turn he will need previous experience or will have to acquire a working knowledge of your processes before he will be successful in selling his ideas.

In the matter of borrowing from other industries, I believe the textile game is somewhat distinctive in exchanging little; not that it is a backward industry but rather that its problems are quite separate and distinct from other lines. The man who comes from another industry to textiles can contribute most in point of view and unconventional approach to his problems.

The prime requisite of an industrial engineer working in your mill is analytical ability. He must have that or he is not an engineer. Next comes plain horse-sense, which includes diplomacy, understanding of labor and the ability to present ideas in plain language. Give such a man cooperation, feed him with ideas and hunches which you have had for some time and have not been able to work out satisfactorily, and you will get better results from your own work and better results from his than if you stand back and wait for him to produce 'em alone.

M.C.B.

Editor, Overseers' Round-Table:

Wanton elimination of processes or of men is by no means the best way to produce the maximum amount of efficiency in a mill. Too much is at stake to allow improper experimentation on cloth or yarn in the daily run of production. For this reason the unspecialized engineer must first familiarize himself with the most modern methods of procuring the desired results. He must study not only methods of manufacture but their effect on the particular problem in hand.

On the other hand, the specialized efficiency engineer does, of necessity, keep abreast with the latest developments in his particular field. He understands various methods of manufacture and the advisability of any minor or major change. He is in a far better position to offer constructive advice. Unnecessary loss of time and expense is, therefore, avoided.

JACK JARMAK.

QUESTIONS AND ANSWERS

Tinting Spun Rayon

Technical Editor:

We are beginning the manufacture of spun rayon yarn, and there are, of course, many problems which must be worked out to our best advantage. One of these is the best manner to tint or mark right and left twist to keep each separate. We should like to know whether this tinting is best done in the raw stock or in the roving form by soaking it in the tint and then drying. Is this the more universally adopted method or is some other method more satisfactory? (8052)

Several methods are employed for distinguishing between left and right twist, the choice depending largely on local conditions. The method which appears to be in most common use is tinting in skein form. Inquiries among mill men indicate that this method has certain advantages, but entails the added expense of skein winding. Two other methods are the crayon method and the colored bobbin or cop method.

In the crayon method a standard color is selected for left twist, let us say, green. Another color, yellow, for example, is used for right twist. Before the full bobbins or cops are removed from the spinning machine, the machine operator or the person in charge places a mark of 1 to 2 in. on the yarn. If the yarn is left twist, green crayon is used. After the yarn has been marked, it is removed from the machine and placed in a rack, box, or truck depending on the equipment of the mill. When frames of right-twisted yarn are doffed, yellow chalk is used in place of green chalk.

The colored bobbin method is often employed when the yarn is spun and wound on a wooden bobbin at the spinning frame. The bobbins are painted for about ½ to ¾ in. at the tips; bobbins for holding left-twist yarn are painted green at the top, and those for right-twisted yarn are painted yellow.

The colored cop method is used when the yarn is spun and wound onto paper cops at the mule or spinning frame. It is possible to obtain green cops for left-twist and yellow cops for right-twist yarns.

Recently a dual-type twister has been placed on the market which permits tinting on the twister. On this machine, after part of the necessary twist has been inserted, the yarn is passed through a trough of tinting solution, and then the rest of the twist is inserted.

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Grinding Roller Covering

Technical Editor:

I have purchased the book "Cotton Yarn Manufacturing Problems," in which are instructions for covering top front rollers with leather. We cover our rollers in the same manner as described in this book, but for one exception—we do not grind the leather for evenness. Will you please tell us how this is done? (8022)

A special type of machine is employed for grinding down the back of the leather

after it has been cut in strips from the hide. The machine consists of a drum to which the strip is clamped and a grinder roll running 450 to 500 r.p.m. The position of the drum holding the strip of skin can be adjusted to that of the grinder roll and so suited to every strip. This permits removing a minimum of the skin to bring each strip to a uniform thickness. A fan carries away the leather ground off and deposits it in a collecting bag.

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Distorted Stitches in Hosiery

Technical Editor:

We are enclosing herewith a sample of a 5-thread, 20-turn, 90% silk, 45-gage, full-fashioned stocking, with 10-turn welt. This stocking you will observe shows a number of bruised or distorted stitches in the welt, and we should appreciate your advice as to the cause of these and what you could suggest to rectify the trouble.

We are backwinding all our silk over a good, neutral solution of backwinding oil, which seems to give us satisfactory results; and these goods look perfect in the gum after knitting. They are dyed by the one-bath method. Our dye nets are not overloaded, and overcrowding of the hydro-extractor is also avoided. Our silk, after backwinding, is conditioned for at least 24 hr. and seems to be in good condition when used. (8036)

This is one of the common problems in connection with knitting welts, and it seems to vary with the character and condition of the silk being used. The knitting of the welt is very sensitive to silk conditioning. If the silk is properly conditioned and the ware-roller tension and stitch adjustment of the machine are correctly set, there should be little of this trouble. Yet a machine will make good welts for several hours; and then, because of a change in the humidity of the air or the nature of the silk, this trouble will develop. For this reason it is advisable to run a silk conditioned in a way that will be least affected by atmospheric conditions. Silk treated to give it hygroscopic properties is not so desirable for welts, since it is affected more by atmospheric conditions.

Welts knit too wet and rolled up are likely to develop distorted stitches. Therefore quick-drying silk is preferable for welts. The welts should be practically dry by the time the leg is completed. It is necessary to experiment with different soaking treatments and back-winding oils to obtain results best suited to the requirements.

More uniform take-up tension can be had with two ware-roller straps than with one. These straps should be balanced as to length and elasticity to give equal pull on the fabric. The ware-roller weights should be adjusted to give the clearest fabric. The welts should be spread out smoothly and allowed practically to dry before being rolled up into bundles.

In the samples submitted the stitch is rather loosely knit, and a few more courses per inch would help to keep the stitch formation under better control. The finish of the hose seems rather soft and easy to mark. A type of finish to produce a harsher feel and give more body to the fabric would probably permit smoother and firmer boarding out and give a better finish.

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Mohair Frieze

Technical Editor:

We have been having some trouble with mohair frieze coming through with a pocky uneven face like sample No. 2, which we enclose. It has proved rather difficult to locate the cause, and we should appreciate your opinion. Sample No. 1 shows the fabric as it should run. (8056)

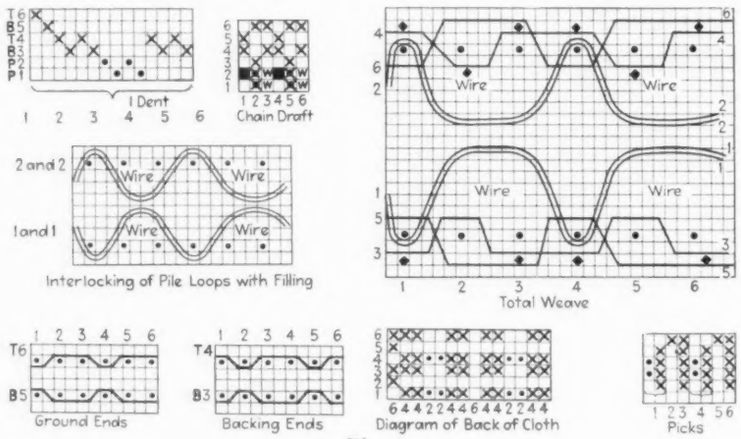

Fig. 1

The two samples of mohair frieze are both of the same weave, shown in Fig. 1. The trouble with No. 2 is that the pile ends are rolling; or, in other words, the pile is disturbed. As all the ends are in one dent, it is impossible that the pile ends can be cut by the reed dent, which might be the case if a wire loom were used weaving one piece.

You do not state what kind of a loom

QUESTIONS AND ANSWERS

you are employing, but apparently it is a double- or single-shuttle plush loom with a wire in each dent. As these samples have a large number of ends of coarse yarns, they require a reed which will permit the ends to pass the wires when needed.

Probably sample No. 1 was made with two pile warps. This would spread out the ends. There are about 1,700 ends of pile in 50 in. of cloth width. Therefore, 3,400 would be too many for one beam. Instead of two warps, a false reed dent could be used to separate the pile ends. It would also be possible to alter the construction somewhat by adding two more ground

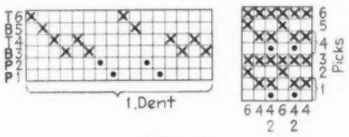

Fig. 2

ends working like Nos. 6 and 5. These two ends would work between the two pile ends, keeping them straight. (This draft is shown at Fig. 2.) The trouble might be somewhat overcome by adding more pile bars.

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Oil Content of Woolen Yarn

Technical Editor:

Will you kindly inform us what the standard oil content should be in a dyed woolen yarn. (8059)

The amount of oil added at the picker is usually from 5 to 10%, depending on the character of the stock and provided the yarn is 100% wool fiber. As the requirements for fiber lubrication for woolen yarns are so varied, it is difficult to set up fixed standards for oil content. In case the yarns in question were purchased from a spinner, extraction tests could be made on the delivery and on the original sample lot, and a comparison made between them.

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Uneven Dyeing on Cotton Yarn

Technical Editor:

We are sending you two skeins of 70/1 combed-peeler mercerized yarn. Will you advise us why one of these skeins took the dye much better than the other, when both skeins were processed under the same conditions? (8041)

It is our belief that the skein which has dyed to the lighter shade has not been mercerized. The reasons for this opinion are as follows: The difference in shade between the two skeins is greater than would be expected between skeins which differ in degree of mercerization, such as might be caused by any ordinary variation in the process, or by any ordinary variation in the original cotton. Redyeing to a darker shade with a direct blue gave about the same relative difference in the result, showing that the fault was not merely in the dyeing. The luster of the lighter skein is inferior and should be

checked against that of the gray yarn boiled-out and dyed to the same shade without mercerizing. When the lighter colored yarn is examined under the microscope, it appears to be unmercerized. The lighter colored skein is less felted together; the tie bands are less shrunk; and the loose cut ends of the tie band knots do not look shrivelled up by the caustic, as do those of the darker skein.

It is believed, therefore, that the yarn was boiled-out; but through some error was passed on through the process without being mercerized. As an alternative explanation, it might have been mercerized with an extremely weak caustic, but this seems even less likely.

If the difficulty persists, and can be shown not to be due to the explanation given, the cotton and the process should be carefully checked-up at the plant for any lack of uniformity. The fault can be located with more certainty in that way than by outside laboratory tests.

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Reediness in Rayons

Technical Editor:

I am enclosing a sample of rayon fabric woven on a Stafford cotton loom. Your advice on how to overcome the evident longitudinal streaks would be much appreciated.

The cloth has the appearance of what is termed "reediness," but an attempt to overcome this by the usual practice when weaving cotton fabrics of obtaining better "cover" by raising the whip-roll and breast-beam met with disastrous results owing to the nature of the fiber.

Particulars are as follows: plain weave; reed, 40s; ends, 3,276; picks per inch, 80; harnesses level with lay, ½ in. to ¾ in. from fell of cloth; diameter of sand roll, 4½ in.; diameter of whip-roll, 4 in.; drop wire, positioned 13 in. from harnesses and 10½ in. from whip-roll; steel heddles employed; rope friction on beam. (8050)

We do not consider the sample submitted as reedy for a fabric of this type. Rayon is a continuous filament, and the filaments in the yarn must not be disturbed during the weaving process. Weaving with the whip-roll or breast-beam raised above the warp line is unsuited to rayon.

You do not say whether the warp is drawn in straight or whether the fabric is woven on a dobby or cam loom. A straight draw is not good for plain weaving. A better cover can be secured by drawing in the harnesses 1-3-2-4 or, if six harnesses are used, 1-3-5-2-6-4.

The manner in which the ends are drawn in the drop wires has some influence on the cover. If a two-bank drop-wire frame is used and the ends are drawn in the harnesses 1-3-2-4, the ends should be drawn in the drop wires 1 and 3 on one bank and 2 and 4 on the next bank. Warps wired in this manner will not knit in back of the drop-wire frame.

The yarn should not be crowded in the harnesses. The heddles should be perfectly loose on the heddle bars. The sheds should be timed to close immediately after the shuttle has passed the selvage. If these rules are followed strictly, there will be little trouble from reedy cloth.

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Spot on Knit Goods

Technical Editor:

We are enclosing a knitted garment upon which you will notice a dark smooch, the cause of which we are at a loss to understand. This stain is not apparent when the goods are boxed, but develops after they have lain in stock for a while. Will you kindly examine the sample and let us know, if possible, the cause of our trouble? (7944)

Examination of the garment indicates that the spot is due to the presence of oil. The stain is readily removed with any of a variety of solvents. It is our opinion that the fabric was stained after the knitting operation.

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Handkerchief Constructions

Technical Editor:

We should like to obtain the following information regarding the manufacture of fine cotton handkerchiefs—say, for example, 96/100 quality white or colored cross bars: (1) Is it the practice to use two-ply yarns, particularly for all satin weaves? (2) Is it practical to cram more than six ends in the split in the satin stripes in order to make the satin stripes show up extra well? (3) Is rayon ever used in the filling satin stripes as a substitute for mercerized cotton in order that the satin stripes will stand out better in the body of the cloth? (8045)

1. It is not the practice to use two-ply yarns for sateen weaves on handkerchief borders. Two-ply yarns are used only when the decoration in the border calls for white cords, and in most cases a 2/20 white cord is used. If the specifications should call for color cords, it is customary to use a "4 as 1" bunched color cord; that is, four ends of single ground color are drawn and woven as one end.

2. It is not practical to cram more than six ends to the dent when drawing for the weaving of a sateen stripe. Five ends per dent would be the limit, but in most cases only four ends per dent are drawn for sateen stripe. The reason for this is that it is difficult to equal a warp sateen stripe in the filling if the warp stripe is drawn more than four ends per dent. This applies to the use of gray or color in the weaving of warp and filling borders.

3. Rayon is often used in filling sateen stripes, also in warp sateen stripes. When laying out rayon borders, it is customary to use 150-denier rayon for the sateen in warp and filling and to draw it three ends per dent. Mercerized yarns are rarely used for warp or filling borders.

TEXTILE WORLD'S

Cotton Digest

SOME of the comments on the cotton mill curtailment program, authorized by NRA, are rather naïve. "Now it (the cotton textile industry) proposes to cut output 25% under that agreement and thus becomes the first major industry to undertake planned economy," it is triumphantly stated in the New York *Times*.

The cotton industry has been struggling along at this same job for several years. It has had organized curtailment programs right along. The only difference now is that—we hope—there is a chance of enforcing them.

The Cotton Textile Industry Committee will be the target for bricks hurled by those rugged individualists who see in this latest move just one more step toward artificial control. Sure it is . . . but look where "natural control" brought us!—*Editor.*

Committee Retains Gardner

The Cotton Textile Industry Committee has secured the services in Washington of O. Max Gardner, former Governor of North Carolina. In making this announcement, George A. Sloan, chairman, called attention to numerous difficult problems confronting the cotton textile industry and the importance to it of detached and constructive advice from lawyers with a broad industrial background. He stated that the committee felt fortunate in securing the local assistance in Washington of Governor Gardner, himself a textile manufacturer.

•

Dec. 1 Crop Report

The Dec. 1 cotton report, issued Dec. 8, placed crop estimate at 13,177,000 bales, with a yield of 209.4 lb. per acre of the 30,144,000 acres for harvest. Ginnings to Dec. 1 were 12,108,292 bales.

•

Compensatory Taxes on Jute and Paper Products

Compensatory taxes on certain jute and paper products were put into effect Dec. 1 by Secretary of Agriculture Wallace, upholding the contention of cotton interests that the processing tax on cotton products had caused an excessive shift away from those products. Rates of compensatory taxes announced are: On jute 2.9c. per lb. on first processing into bags and into twine of 275 ft. or more in length; on paper 2.04c. per lb. on first domestic processing into multi-walled paper bags; of 2.14c. per lb. on open-mesh paper fabric into open-mesh bags; of .715c. per lb. on first processing of paper towels; and 4.06c. per lb. on paper processed into gummed paper tape. Recommendations will be made later for other compensatory taxes.

•

Cotton Textile Curtailment Approved

A 25% curtailment of cotton textile production, as permitted in the code, to be effected during the month of December has been approved by General Johnson. The industry's recommendation which the General approved pointed out that such curtailment was necessary to meet emergency conditions now prevailing in the industry. This means that productive machinery will not be operated during December for more than 75% of the hours otherwise permitted by the code. The order applies to all units operating under the cotton textile code.

•

Tire Fabric Stay Ended

General Hugh S. Johnson, on Dec. 1, terminated the exemption of tire fabric manufacturers from the terms of the cotton textile code restricting machine operations to two 40-hour shifts. This exemption had been granted after the signing of the code and had been continued up to this time.

•

Planning and Advisory Committees Appointed

George A. Sloan, chairman of the cotton textile industry committee, recently announced the appointment of planning and advisory committees for the fine cotton goods group and the carded sales yarn group.

The committee for the fine cotton goods group consists of the following:

N. F. Ayer, W. E. Barrett, Morgan Butler, Weston Howland and Russell H. Leonard, of Boston, Mass.; Allan Barrows and Frank I. Neild, of New Bedford, Mass.; William W. Coriell, Homer Loring, John H. McMahon and Gerrish H. Milliken, of New York, N. Y.; James A. Burke, Fall River, Mass.; H. H. Burton, Webster, Mass.; Major Stuart W. Cramer, Cramerton, N. C.; Robert E. Henry, Greenville, S. C.; and George M. Wright, Great Falls, S. C.

The similar committee for carded sales yarn group follows:

W. D. Anderson, Jr., Macon, Ga.; Cason J. Callaway, LaGrange, Ga.; Donald Comer, Birmingham, Ala.; Sidney P. Cooper, Henderson, N. C.; Philip Dana, Westbrook, Maine; F. C. Dumaine, Jr., Boston, Mass.; A. M. Fairley, Laurinburg, N. C.; B. B. Gossett, Charlotte, N. C.; Arthur K. Winget, Albemarle, N. C.; Fred Rakestraw and Edwin F. Sherman, Philadelphia, Pa.

•

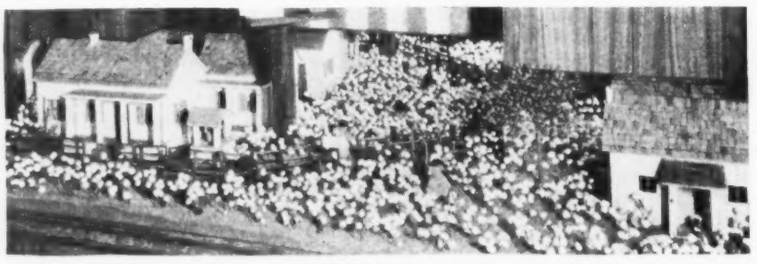
To Sell Bowling Green Yarns

H. A. Florsheim, 245 Fifth Ave., New York, has taken over the exclusive sale of the yarns made by Bowling Green Spinning Co., of Clover, S. C., for all sections north of Pennsylvania. This company spins single combed yarns from 8s upward.

•

Kendall Co. Merges Sales Activities

The Kendall Co., Boston, Mass., has announced that, effective Dec. 4, the textile sales departments of its Griswoldville Mfg. Co. and the Lewis Mfg. Co. were consolidated and are now operating as the Kendall Mills. H. P. Kendall is president of Kendall Mills, while R. R. Higgins, who has been general manager and sales manager of Lewis Mfg. Co., is vice-president of the new organization, with offices at Walpole, Mass.



Miniature Cotton Plantation—Part of an exhibit dedicated to NRA shown by Southeastern Cottons, Inc., in its New York office. Mirrors lend the impression of depth. Robert Steiniger of Southeastern made the exhibit.

Carded Yarn Group Code Provisions

Following several conferences of the joint committee of carded sales yarn spinners and merchants, more than 100 interested mill executives and about 15 yarn merchants met in Charlotte, N. C., Nov. 14, and favorably considered supplemental code provisions intended to clarify and improve the merchandising of carded yarns. Captain A. M. Fairley, Waverly Mills, Inc., Laurinburg, N. C., chairman of the carded sales yarn group of the Cotton-Textile Institute, presided at the meeting.

The clauses provide for statistical reports, protection of agents' commission, prohibition of commission splitting, agents not to trade on own account, no price guarantee, selling agents' commission not less than 5%, brokerage to brokers not less than 2%, uniform form of contract to be used.

•

Cottons Strengthened After Inactive Period

November was a generally quiet month in cotton goods, and, although December opens with new and strengthening elements on the horizon, it is not expected that any unusual volume of business will result.

The 75% operation in December is a strengthening factor though it is pointed out that in effect it merely assures operatives of the usual Christmas holiday. Compensatory taxes on jute bags and twine and cotton bags is an aid in preventing too close competition.

Gray goods prices were fractionally lower in early December as compared with month previous, 37 in., 48 square, 4-yd. sheeting being at 6⅝c. against 6⅞c.; 30 in., 40x28, 7-oz. osñaburg at 8⅞c. against 9½c.; 38½ in., 64x60 print cloths at 6½c. against 6⅝c.; 39 in., 80 squares at 8⅞c. against 9c.

Cotton yarns were quiet with improved inquiry of late described principally as price checking.

•

Financial Notes

Bibb Mfg. Co., Macon, Ga., reported net profit of $821,160 after depreciation and taxes for the fiscal year ended Aug. 31, as compared with net profit of $133,570 for the preceding fiscal year.

United Merchants & Manufacturers and subsidiaries, Boston, showed a net operating profit of $1,445,207 for the year ended July 31, 1933. Homer Loring, president, in his report, pointed out that net current assets at $7,292,818 showed increase over previous year of $1,820,574. He also stated that the readjustment plan adopted by stockholders June 1, 1933, had greatly strengthened the company's credit.

Kilburn Mill, New Bedford, Mass., reports a profit of $33,964.54 after depreciation for the year ending Sept. 30. The directors declared a dividend of $1 a share, payable Dec. 1 to stockholders of record Nov. 20.

Otis Co., Ware, Mass., reports, for the year ended Oct. 7, 1933, a net loss, of $131,463, as compared with losses in the two previous years of $572,451 and $336,104 respectively. Sales for the fiscal year just closed totaled $2,916,744, an increase of 37% over the dollar volume of the previous year.

Pomona Mills, Inc., Greensboro, N. C., operating under Norman A. Boren, receiver, reported net profit of $1,769 for the quarter ended Sept. 30.

COTTON IN THIS ISSUE

	page
Russian Trade—Cotton Goods Organize for Share	57
Code Authorities Concentrate on Code Application	60
Conversion Factors Under Cotton Processing Tax	64
Warp Mercerizing—Omits Preliminary Boil-Out	72
Concentration Keeps 8-Loom Mill Busy	73
Strength, Yarn Count—New Correction Formula	77
Modern Style Brocade—Abstract Effect	79
Relief and Recovery Discussed at Pinehurst	80
60-Hour Mill—Best Plan for Division of Shifts	84
Recirculating Air Filter	96
Shuttle with Improved Spring End	96
Builder Motion	96
Roving-Frame Improvements	96
Grinding Roller Covering	102
Handkerchief Constructions	103

Cotton Mill News

Alabama Mills, Inc., Birmingham, Ala., purchased at public auction Dec. 2 the 10 plants and other properties of Alabama Mills Co., which has been operating in receivership for several months, for securities in the new corporation valued at $1,350,000. The new company, having 214,000 shares of common stock, has elected the following officers: Paul A. Redmond, Birmingham, president; E. J. Heitzberg, Nashville, Tenn., vice-president; and W. E. Hendrick, Birmingham, secretary-treasurer.

Goodyear Tire & Rubber Co. is the purchaser of the **Connecticut Mills** property, Decatur, Ala., for $251,000, according to court confirmation. Plant will be reconditioned at cost of $100,000 and put into operation. Goodyear already operates tire fabric mills at Gadsden, Ala., and Rockmart, Cedartown and Cartersville, Ga.

Lewis Mfg. Co., a division of the **Kendall Co.,** Walpole, Mass., has awarded contract to Temple & Crane, Inc., Boston, for construction of a new water purification plant, including reinforced concrete filter basins, tanks, and reservoir, surmounted by brick, steel and concrete structure of two and three stories, 45 x 119 ft. Metcalf & Eddy, Boston, are the engineers. Work will start immediately.

America Combed Yarn Corp., Gastonia, N. C., has completed addition to Clara plant and will install finishing equipment brought from a plant at Bessemer City, N. C.

Raeford Mills Co., Laurel Hill, N. C., has been chartered to manufacture yarns and other textiles; capital authorized $100,000 with $3,000 stock subscribed by Edwin Morgan, J. D. Phillips and E. H. Gibson, all of Laurinburg, N. C.

Villetex Mills, Inc., Mooresville, N. C., recently organized by R. L. Huffines, Jr., and associates, of Clayton and Fayetteville, N. C., has purchased the spinning mill of **Cascade Mills,** equipped with 12,000 spindles, as reported in our November issue, and will operate the plant on carded yarns. As previously noted, J. Spencer Love and associates, of Burlington, N. C., have acquired the weaving plant of Cascade Mills.

Old Fort (N.C.) **Community Cotton Mill,** recently organized by J. F. Harmon and associates, plans construction of a new local mill. Application has been made for Federal loan of about $500,000, to carry out project.

Watts Cotton Mill, Paterson, N. C., which has been idle for some time, was recently purchased by L. B. Hoard.

Pee Dee Mfg. Co., Rockingham, N. C., is considering complete modernization of its two plants. Details will be decided upon at a meeting of stockholders and directors in the near future.

Columbia Narrow Fabric Co., Shannock, R. I., has let general contract to Belknap Construction Co., Wakefield, Mass., for rebuilding of power house, recently damaged by fire, reported to cost over $21,000, with equipment. H. H. Fales, Providence, R. I., is engineer.

Aragon-Baldwin Cotton Mills, Chester, S. C., at special meeting of common and preferred stockholders, Nov. 16, approved sale of the Baldwin plant, located in Chester, to the Springs Cotton Mills, Lancaster, S. C. Transfer of the properties were made on Dec. 2.

Victor-Monaghan Co., Greenville, S. C., has awarded contract to Potter & Shackelford, Inc., Greenville, for an addition to its Walhalla (S. C.) plant at total cost of about $100,000. J. E. Sirrine & Co., Greenville, are the engineers.

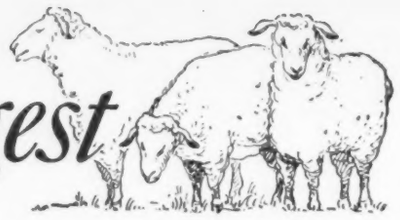
Cannon Mills Co., Plant No. 3, York, S. C., is having repairs and enlargements made to its mill building and will install modern warping equipment.

Shelbyville (Tenn.) **Mills, Inc.,** which have been in receivership, have been purchased by United States Rubber Co., and will be converted to manufacture tire cord. Plant is equipped with 23,000 spindles and 594 looms. Operating personnel will be headed by H. H. Ocheltree, superintendent, and A. F. Mullins, Jr., office manager.

Strasburg (Va.) **Weaving Corp.** has been chartered to make and deal in textiles. Samuel Strauss, 10 West 86th St., New York, is president and treasurer.

TEXTILE WORLD'S

Wool Digest



AFTER unfortunate, but understandable, delay, progress has been made toward the development of fair trade practice provisions for the wool textile industry.

True, the unfair trade practices listed in the proposed supplementary Article XIII of the code are merely broad statements of policy and in a way remind one of the "Codes of Ethics" which were epidemic in the textile trades some years ago. Nevertheless, the real job done to date has been the provision for sub-code authorities representing the various divisions of the industry. It is in these sub-groups that the real hope for fair trade provisions, with teeth in them, rests. It is to be hoped that none of these divisions muffs its opportunity.—*Editor.*

Code Receives Important Additions

The wool-textile code is having essential additions made to it and should be a complete functioning unit by the end of the year. Provision for a code authority and a set of fair trade practices are being added as described on page 62. The fair trade definitions are few and such as will receive most general approbation. Many of the items listed in this department in August issue have not been made part of the code, but they will be utilized by various groups of the industry in their own self-government.

•

Women's Wear Promises Better After Slump

After a rather uncertain time in November, women's wear wool goods are exhibiting better sentiment. Although the fall season for women's wear started well, it petered out and ended with a dumping of such lines as crepes at ridiculous prices from the stand-point of replacement. There has been more interest and trade is called on the upturn.

•

Men's Wear Spring Lines Expanding

Although normally a between-seasons time for the men's wear market there were numerous constructive developments during the last month. Clothiers have been on the road with spring 1934 lines and found good support despite the further advance in prices. It is said that clothiers initial spring business has run 30% ahead of last year. Retail prices will be noticeably higher, one branded line which was $20 last spring and $25 this season will be $32.50 next spring; another which was $30 and is now $35, will be $42. Reordering of spring goods by some clothiers has increased mills advance business.

Fabrics of medium and lower grade have been doing better business and it is evident that some clothiers will try to hold to their fixed retail prices by taking a deep cut out of quality. Cotton warp worsteds, which were a dead issue during the bottom price era, have a new reason for being and there is interest even in all-cotton fabrics.

Buyers who have tried to get fabric mills to cut prices on spring lines have found this a fruitless task.

•

Second Hand Pressure on Part Wool Blankets

A price movement out of harmony with the general situation has been reported in the secondary market for part wool blankets. Jobbers have been unloading, perhaps in anticipation of year-end inventory, at prices which it is said under-cut mill quotations. It seems that retailers' appetite for lower grades of blankets has been mild of late due to large purchases at low prices early in the season. The primary market rise outran possible values in second-hands, hence the apparent set back. Once these stocks are liquidated, first hand prices will rule once more. On all wool lines there are still lots available at $100 per lb., but new business is not considered under $1.20 to $1.40 per lb.

•

Brief Presented Against Tax on Wool

A brief was submitted by the National Association of Wool Manufacturers to Secretary of Agriculture Wallace on Nov. 10 protesting against the imposition of any compensatory processing tax on wool. It was argued that wool did not compete with cotton but rather that cotton competed with wool; also that any tax on wool would be an unwarranted burden on the consumer. The brief is largely a presentation of evidence that wool apparel costs have been radically advanced and that no decreases are to be expected at this time; also that every effort is being made to see that increases in price to the consumer are held at a minimum. The brief closes with the statement that the association has no objection to the removal of the processing tax on cotton as the consumption of wool would not be affected. In a previous brief it had been pointed out that cotton was only about 4½% of the raw materials used by the woolen and worsted goods industry.

•

Tops Recover From October Easiness

Wool tops on the exchange have reflected the better tone in the raw wool market. The rise in futures during November was 6.2 to 6.7c. with various months closing on Dec. 1 at $1.06 to $1.077. In the meantime Boston spots moved up 2c. to $1.115 on Dec. 1. The turn for the better with more active trading and higher prices came after the middle of November. October had witnessed easier prices and early November was barely firm.

•

Wool Strength Leads to New High Price

Domestic wool values at the end of November were at a new high for the year. After several weeks of inactivity mill buying came into the market and the strong statistical position assisted by strong foreign markets and high sterling exchange brought about an advance of 3% during the last 10 days of the month. While this mill buying is not regarded wholly as a rush from cash into wool, it is believed that some manufacturers had overstayed their market on the raw material. The more conservative view was that they were making provisions for reasonable inventories. Dealers have low stocks but there is wide difference of opinion as to quantities which mills hold.

The price of wool as heretofore depends chiefly on its statistically strong position and the steady upward surge has been quite independent of inflationary influences seen in other commodity markets. The average price of the territory wool group for August was 72.3c.; September, 75.1c.; October, 76.3c.; November, 77.0c.; Dec. 1, 78.5c.

The rise in the colonial markets has had an encouraging effect throughout the world and is interpreted as heralding the rapid approach of widely improved conditions. All Australia has been put in better spirits by the decided lift in wool values. American importing houses are hopeful of larger business in the future which would be assisted by a stronger dollar and some moderate recession in the Australian

market such as sometimes occurs at the end of the first half of the season. However, it seems hardly open to question that whatever importing is done to offset a possible shortage of domestic wool between now and next May, will be at considerably higher prices than on similar domestic types.

October wool consumption in clean pounds was 17,512,000. The year through October totaled 158,059 lb., 35% greater than 1932.

•

Wide Range in Prices on Shirting Flannel

Bids to furnish the Army Quartermaster with 1,000,000 to 1,500,000 yds. of 10½ oz. shirting flannel made of French spun 60s or finer wool and containing not over 20% cotton, brought out bids from 10 concerns ranging from $1.298 to $1.885. Fabric is for the C.C.C. The wide range of price is believed to suggest the wide range of values at which raw wool is owned rather than differences in manufacturing cost. There were 21 bidders on the 1,010,000 yd. 11 oz. all wool serge or 10½ oz. flannel shirting (opened Dec. 1), and the range on the first item was from $1.70 to $2.50 and on the second item, $1.30 to $1.65.

•

Lastex Clothing Gets Attention

Lastex clothing for men has attracted attention at retail wherever shown. The garments are made by H. Daroff & Sons, Philadelphia, and involve not only woolens of elastic character but linings of silk and Lastex with the same characteristic. The Lastex bulks about 25% of the fabric whether in suitings or linings. The garments retail for $45 up.

•

New Fabric Made of Huarizo Hair

A new top-coating is being made by S. Stroock & Co. from the hair of the huarizo, a rare Peruvian animal of the llama family. The fiber has unusual luster, softness and warmth. Annual production is limited to about 50 pieces because of scant supply of the hair. The coats will be made by Bibas-Rosenbaum, Inc., wholesaled at $36.50 net base, and retailed for $75.

•

Silk Spindles Turn to Wool in Japan

Curtailment of 33% of the 425,000 spindles of the Japan Spun Silk Yarn Producers Association which has been set in accordance with agreement, is resulting in application of the idle spindles to wool spinning. Advice from Tokyo states that 60,000 spindles out of 140,000 otherwise idle will be operating on wool spinning by the end of the year.

WOOL IN THIS ISSUE

	page
Wool Mill Kept Modern by Constant Improvement	58
Code Authority and Fair Practice for Woolen Men	62
Little Progress Despite Efforts with Angora Rabbit	67
Heat Reflecting Properties of Dyed Wool	76
Overseers Association Joins Half-Century Club	78
Weave Room to Blame for Imperfections	81
New Products and Techniques Discussed by ASME	82
60-Hour Mill—Best Plan for Division of Shifts	84
Yarn Conditioning Machine	95
Determines Fabric Compressibility	97
Mohair Frieze	102
Oil Content of Woolen Yarn	103

Wilton Specifications Revised

A revision of the specifications for Wilton carpets and rugs in the Federal Standard Stock Catalog covering commodities purchased by the Government is being undertaken by the Federal Specifications Board, Washington, D. C. Copies of the proposed changes can be obtained from the board for criticism.

•

British Fabric Houses Open N. Y. Offices

The British Empire Building, a unit of Rockefeller Center on Fifth Ave., New York, contains the offices of a number of British men's wear fabric jobbers and importers, also tailors. The building offers its tenants the facilities of a "free port."

•

Lanoline as Rust Preventive

British technicians have concluded that crude wool grease, the by-product of scouring, is a superior coating material for steel to prevent rust. Testing pieces stored in the corrosive atmosphere of a store-shed for ammonium nitrate withstood corrosion for three years. Under the same conditions pieces cleaned and dried or protected by a thin film of mineral oil were completely rusted in from one to six months.

•

Wool Mill News

Brookside Woolen Co., South Glastonbury, Conn., is a new corporation formed to manufacture woolen goods. Paid-in capital is $15,000 and incorporators include Aldo Pogoni and R. J. Gorman.

Limerick (Me.) **Yarn Mills**, formed as noted last month, are operating the former Limerick Mills on Bradford-spun mohair, worsted, rayon, alpaca, knitting and specialty yarns, to be sold through its office at 465 Congress St., Portland, Me. David Ford, 200 Madison Ave., New York, and Chester A. Jordan, of Portland, are the sole owners. There are 26,000 spindles.

American Woolen Co. sold residential holdings in the Collinsville section of Dracut, Mass., at public auction Nov. 22. Samuel T. Freeman, Boston, as auctioneer sold 44 parcels for a total of $27,100.

Goodall Worsted Co. reports net earnings for year ended Sept. 30, 1933, of $446,951, against loss for nine months ended Sept. 30, 1932, of $454,871.

Berkshire Woolen Co., Pittsfield, Mass., was closed for a week recently to permit installation of two new water wheels.

F. C. Huyck & Co., Rensselaer, N. Y., has started construction of a one-story addition with floor space of several thousand square feet, to be used for warehouse purposes.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has sold its former tapestry mill on Columbus avenue, Yonkers, to a group of Yonkers men who will lease the property in parcels for various industrial uses.

West Bend Woolen Mills Co., West Bend, Wis., has work nearing completion on new two-story mill, 35 x 70 ft., on State Highway 33, about one mile from city, and will place the unit in service at early date.

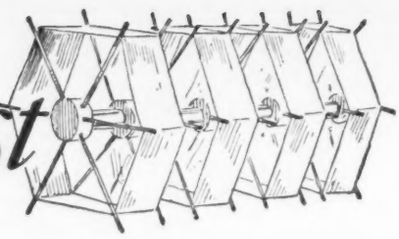
Felt & Textiles of Australia, Ltd., through the South African branch manager, R. Faulks, has been sounding out possibilities of establishing a branch plant in Canada.

Caldwell Woolen Mills, Ltd., is the name of a new firm organized by D. W. F. Caldwell, of Ottawa, Ont., who will take over and operate the two-set woolen mill formerly operated by Boyd Caldwell & Co., Ltd., located at Appleton, Ont. Blankets and hosiery will be manufactured.

A. J. Brown & Co., Ltd., Collingwood, Ont., is being offered for sale by E. W. Woods & Co., Ltd., auctioneers, Toronto, Ont.

TEXTILE WORLD'S

Silk Digest



THE rapid succession of new names for the Silk Association of America is getting us a bit dizzy. First the Silk and Rayon Institute; then the Textile Institute—and now the Federated Textile Industries, Inc.

About all we can say for the latest title is that it's not as bad as was the Textile Institute—which for various, almost obvious, reasons, was terrible.

On the negative side: First, Federated Textile Industries, Inc., sounds like the name of a commercial enterprise. Second, it tries to blanket the whole textile industry and as a result gives none of the information about its scope which we believe an associational name should give.

Why this sudden desertion of the silk industry as a publicly recognized branch of trade? Is there some fear as to its future existence? And yet, official announcements state that the organization with its new name "will embrace various trade groups operating in or allied with the silk industry."

We have a new name to suggest. How about the Silk Association of America?—*Editor.*

Silk Strike Ends With Compromise

The long-protracted silk weavers strike in the Paterson, N. J. district, which tied up fabric manufacture there throughout the fall season, reached its end Nov. 29, when manufacturers and workers voted in favor of a compromise settlement plan. The accepted terms give weavers $2.00 per 100,000 picks, equal to a weekly average pay of $20.00 to $22.50, and representing a 15% increase. The strikers returned to work the week following.

The strike was one of the most costly and lengthy in the history of the silk weaving industry. It started in August about the same time as the dyers' strike, which was recently settled. The weavers' strike spread through the Paterson mill district until it involved about 10,000 operators, and continued for 14 weeks. Civic organizations in Paterson estimated the loss in wages at $100,000 weekly, and while the loss to manufacturers cannot be stated, it is known this will run high into the millions.

The strikers, who were represented by the Associated Silk Workers, and other unions, started voting Nov. 27 on the terms. Manufacturers cast their ballots Nov. 28. The terms provide for earnings on a 40-hour week basis as follows: Loom fixers $32 for a 40-loom section; winders, $15 up to and including 120 spindles, run at medium speed; quillers, $14.40; twisters 52c. to 85c. per 1,000 ends; entering 90c. to $1.10 per 1,000 ends; pickers $14; reeding $1.50 for 48 to and including 55 dent reeds; weaving $2 per 100,000 picks; rayon $2 to $2.60 four-loom operation; warpers, hard silk 5.10c. per 100 yd. per 1,000 ends; silk georgette 13c.; plain rayon 12c.; georgette 14½c.

Recognition of the unions is a mandatory provision of the agreement; the terms are effective from date of adoption to Dec. 31, 1934.

During recent weeks many efforts at settlement were made and several times it was definitely announced that the conflict had ended; one plan of $25 weekly for weavers was opposed by mills on the contention that other mills in other districts would pay less. This objection inspired Deputy NRA Administrator Whiteside on Nov. 10 to order a survey of silk mill payrolls with the aim of ascertaining the true wage levels existing throughout the industry.

•

Silk Association Solves Name Problem

The question of a new name for the reorganized Silk Association of America, which has been a moot problem in this organization for some months was finally settled Nov. 22, when the association announced that the new name would be the Federated Textile Industries, Inc. This name reflects the nature of the new organization which is a federation of many associations within the silk and rayon industries. It was made known on Nov. 23 that the Textile Converters Association of America, Inc. would be an affiliate association under the Federated Textile Industries, Inc.; and on Nov. 24, members of the Tie Fabrics Association at a meeting held at Silk Association headquarters took similar action.

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Prints, Moss Crepes Lead

Fairly good buying marked the opening of the early spring broadsilk lines, and weavers were optimistic regarding outlook for the new year. The prophecies of a big print season next month appeared to be substantiated in the response to the first printed novelty offerings. These fabrics are most popular in the light color effects, with interest centering on printed flat crepes; florals as usual are important, and both large and small designs are in demand. Early showings were restricted chiefly to resort merchandise, but the opening of December found some firms displaying fairly extended spring lines. Moss crepes are highlighted in many lines.

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Throwsters Elect

The balloting for the Code Administration Committee for the Throwing Industry, it was announced Nov. 21 by the Throwsters Research Institute, Inc., resulted in the following owners of throwing machinery being elected to serve as this committee for the life of the Code: A. Bosshard, Stehli Silks Corp., A. Coradi, Schwarzenbach Huber Co., Granville Diehl, Bethlehem Silk Co., Charles Epstein, Liberty Throwing Co., Herman Feldman, Kahn & Feldman, George Friedlander, Duplan Silk Corp., Fred. D. Huntington, Real Silk Hosiery Co.,Chas. J. Knowles, Pen Argyl Silk Co., R. K. Laros, R. K. Laros Silk Co., Spencer Love, Burlington Mills, Inc., Wm. Rossmassler, Sauquoit Silk Mfg. Co. and A. B. Strange, Read & Lovatt Mfg. Co.

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Gerli Outlines Silk Promotion Plans

Plans for important improvement projects in the American silk industry which would include weighing limits, a silk trade mark and the establishing of fellowships for silk research, were described by Paolino Gerli, of E. Gerli & Co., New York, in a talk at a recent meeting of the American Association of Textile Chemists and Colorists. Mr. Gerli who recently returned from the International Silk Conference in Paris, is a leading figure in the pending movement for a world campaign to promote silk consumption.

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Piracy Foes Unite

With the aim of making a more concentrated attack on the problem of design piracy, the National Council of Design Protection of the American Bar Association was organized Nov. 17 in

New York. The new organization includes the American Bar Association, the Silk Association of America, the Design Protection Association and the Textile Designers Guild. It was stated that numerous other organizations had applied for membership. Enactment of legislation for design protection will be the chief aim of the new organization.

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Curtailment Cuts Fabric Carry-Over

Substantial reduction in mill inventories of silk and rayon woven fabrics is expected to result from the decision of 31 leading weavers to suspend production of numerous popular constructions for a two-week period this month. The decision was reached as result of activities by the National Rayon Weavers Association in conjunction with the Greyco Sales Corp. Thos. B. Hill, former president of the Silk Association and now president of the Greyco made known that this firm's entire group of mills was pledged to the curtailment policy. The 31 weavers who pledged similar action includes such foremost firms as Stehli Silks Corp., Susquehanna Silk Mills, Galey & Lord, Inc., C. K. Eagle & Co., and Hess, Goldsmith & Co.

Subsequent to this action, the Code Authority of the Silk Industry decided to ask for an industry-wide curtailment of 25% of output of all silk and rayon fabrics.

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Raw Silk Prices Show 15c. Drop

The raw silk market approached the year-end in doubtful mood. November was a quiet month with the silk strike accentuating an already strong disinclination to buy. Prices generally have dropped about 15c. since the beginning of the month and no early rise is looked for. Neither weavers nor knitters placed any appreciable amount of business during the month. However, importers are hopeful that weavers will be compelled to cover for their spring requirements soon.

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NRA Asks Loom Data

A request for complete statistics on looms, and progressive steps toward clarification of the code enforcement program, were the chief activities of the Silk Code Authority during the month of November. Early in the month, Gen. Hugh Jonnson announced the appointment of Lucius R. Eastman, president of the American Arbitration Association, as the NRA representative on the Authority board. The Authority held its organization meeting Nov. 7, at which James A. Goldsmith, of Hess Goldsmith & Co., was elected chairman of the General Planning Committee.

Among the chief code rulings of the Authority were: No averaging of wages, and the 32½c. per hour rate for watchmen must prevail weekly; loomworkers subject to same hours and overtime pay rules as repair shop crews; every order and contract must state that it is subject to provisions of code.

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Home Dressmaking Trend

The trend toward home dress-making as an economic reaction to the depression finds strong confirmation in the announcement by the Fashion Bureau of the Silk Association that newspaper advertising of piece goods during October was 56% above the same month last year. Among the fabrics advertised silk leads with 79,339 agate lines, wool next with 43,095 followed by velvet with 22,820, rayon and other synthetics with 18,877, cotton 15,037, metal cloths 8,228 and lace 994.

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Silk Mill News

Bethel (Conn.) Silk Co. will continue operations in its present plant at Bethel, settlement of a protracted strike having caused executives to rescind their previous decision to remove to Pennsylvania.

Belding - Heminway - Corticelli Co., Putnam, Conn., has sold a mill on South Golden street, Norwich, formerly operated by the Corticelli Silk Co., to Jacob R. Slosberg, Norwich. The mill has been idle several years. The price was said to be about $15,000.

Reed Textile Mills, Orange, Mass., will start operations soon in a factory building owned by the Westinghouse Electric & Mfg. Co. in Orange. **Commercial Silk Co.**, Paterson, N. J., has cancelled plans to move its mill to Orange, where it was to occupy the present Reed plant.

Henry Doherty Silk Co., Clifton, N. J., closed since June, 1932, because of receivership and foreclosure, may be started up as result of an offer to purchase the property from the receiver, Henry Hauser.

Berman Silk Co., Inc., Paterson, N. J., has been organized with capital of 100 shares, to operate a local mill. Erwin M. Kassel and Abram I. Bluestein, 99 Cliff St., Paterson, are principal incorporators.

Hillerton Silk Co., 165 Ward St., Paterson, N. J., Samuel Hiller, head, is considering establishment of branch mill at Watertown, N. Y.

Jolena Silk Co., Inc., Paterson, N. J., has been incorporated with capital of 1,000 shares, to operate a local silk mill. The incorporators are Louis H. Glassman and Max M. Rothstein. New company is represented by Max Cohen, 132 Market St., an attorney.

Wardi Silk Co,. Inc., Union City, N. J., has work under way on remodeling and reconditioning plant formerly occupied by the Seidman Braid & Fabrics Corp., Huntsville, Ala., recently acquired, in preparation for moving all its machinery to this new location. It is planned for operations to begin in January.

Duplan Silk Corp., New York, N. Y., has work under way on re-installation of machinery in mill at Berwick, Pa., and plans are being arranged for early resumption of operations. Equipment has been stored in local warehouse for a number of months.

Canisteo Silk Co. has resumed operations at its Nunda, N. Y., plant, idle for several months. New machinery and equipment has been installed.

High Point (N. C.) **Silk Mill**, successor to **Hill Crest Silk Mill**, with H. A. Knight, manager, has put more than 100 looms into operation and by the first of the year expects to have all 300 in operation.

Shindel Silk Corp., operating plants in Mount Carmel, Hughesville, Northumberland and Elysburgh, Pa., may be sold according to authority given by the Federal Court to J. J. Laughlin and Frank Strauss, receivers, who have been in charge since August, 1931.

Williamsport (Pa.) **Silk Co.**, lately chartered, has acquired former plant of John N. Stearns & Co., and will occupy at once for new mill. Improvements will be made and add additional equipment installed; operation with 400 employees to begin this month.

Woodstock (Va.) city officials have been negotiating with a representative of a New York silk manufacturer looking toward establishment of a silk mill at Woodstock, the first unit of which would employ 50 operatives. The Lexington (Va.) Chamber of Commerce has been approached by officials of the **Standard Broad Silk Works**, Hazleton, Pa., with view to establishing a plant.

Associated Textiles of Canada, Ltd., Louisville, Que., have begun construction of new addition, 150 x 50 ft., two storys, to house dyeing machine. Additional space will thus be made for over 100 looms to be purchased early in 1934.

SILK IN THIS ISSUE

	page
Code Authorities Concentrate on Code Application	60
Fashion Hails New Note of Glamor in Textiles	63
Eliminates Guesswork in Grading Raw Silk	68
60-Hour Mill—Best Plan for Division of Shifts	84
Throwing Illustrated—Recent Changes Stressed	87
Two-Purpose Shuttle	97
Rubber Belt for Silk and Rayon Spinners	97

TEXTILE WORLD'S

Rayon Digest

IT is nearly ten years since we had a lot of fun reporting the contest for a new name for "artificial silk," which first threatened to produce "glos" but finally settled on "rayon." . . . But we were younger then. The thought of another such contest today merely appals us.

For once, we find ourselves in disagreement* with the editor of the *Textile Organon*. Answering his three objections to continuing the use of the word "rayon" as the generic name: (1) We do not believe the acetate producers would subscribe any more readily to any other generic term. (2) The lustrous implication of "rayon" is completely forgotten today, just as is the original meaning of cotton, or wool, or silk. (3) Overshadowing whatever ill-repute "rayon" may have accumulated, is a tremendous amount of good-will far too valuable to discard.

Let's not have another contest!—*Editor.*

*Since we wrote the above, the *Organon* editor has withdrawn his "trial balloon." Consequently, we now withdraw the pin with which we attempted to puncture it.

Trade Watches Plan To Curb Over-Buying

Widespread trade interest involving approval on the part of the majority has greeted the recently announced plan of the dress goods division of the National Rayon Weavers Association to curb over-buying by their customers through a sales-reporting system. Addressing a meeting of rayon and silk mills and credit men at the Hotel New Yorker, New York, last month, William Klopman, of Burlington Silk Mills, chairman of the association's dress goods committee, said the plan was gradually being whipped into shape. It was made known that all orders placed by customers would be submitted to the National Credit Office and compiled, thus enabling any member of the association's dress goods division to estimate a customer's liabilities in terms of his future order commitments as compared with his capital.

Rayon yarn producers regard the movement as a healthy one for the entire industry, and as likely to make for increased stability in yarn movement since it will enable yarn buyers more accurately to gage their customers' true requirements. On Nov. 23 the trade was advised that the order-reporting plan would become effective Dec. 1.

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Producers Welcome Lull

While all divisions of the rayon market reported a consistent slowing-up of orders through November, the end of the month found several leading companies still trying to catch up with deliveries. Some mills were asking for delays on shipments and further postponements were expected. It was generally believed that the current month would see the low point of the season, followed by moderate improvement after the holidays.

Yarn stocks in hands of producers continued low, certain companies having as little as five to seven days' yarn supply on hand. Demand from both knitters and weavers dropped to a negligible point in mid-November, the lull being especially pronounced at the hosiery end. The decline in orders from hosiery manufacturers has been so sharp as to indicate an accumulation of stock in hands of producers who sell extensively to this market.

Broadly speaking, the yarn industry will end the year in a fairly healthy condition. Prices are steady and customers, especially weavers, report a good price situation in their own markets. The drop in yarn call is not regarded as anything more than seasonal, and indeed is proving helpful to producers.

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Rayon Underwear Quality Improves

Current strengthening in retail prices of women's knitted rayon underwear is exciting attention among yarn merchandisers, who view this as further evidence of improvement in the whole rayon underwear industry. While the price situation in rayon underwear distribution still leaves much to be desired, the quality of the merchandise manufactured has decidedly improved, executives of yarn houses report, and they are confident of further progress toward firm prices.

A point of particular interest to the rayon industry, as possibly denoting changes in the yarns to be bought by underwear mills, is the decline in retail demand for certain rayon crepe underwear garments. Retailers also report that good quality rayon underwear will sell more actively in the medium price range than inferior grades at the basement price levels.

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Velvets to Aid Spring Yarn Call

The velvet boom, which has proved so helpful in stimulating rayon yarn movement during recent months, promises to continue through the first quarter of 1934, at least. Paris advices in late November said that velvet was increasing rather than diminishing in significance for the coming season. While rayon is being used in varied degree through all the new fabrics sponsored by the French houses, pile fabrics and other "glamor" surfaces, the DuPont Style Service reports, are outstandingly important.

"Rayon fabrics," the DuPont bulletin states, "are almost the universal choice of the two leading Paris groups, headed, respectively, by Marcel Rochas, modernist, and Jean Patou, classicist."

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Yarn Exports Decline

A pronounced decline in rayon merchandise exports during September is indicated in figures made public Nov. 14 by the Department of Commerce. September exports totaled $154,771, against $264,456 in August, and $278,173 in September last year. Woven dress and piece goods were the chief items; September exports in these lines aggregated 179,873 sq.yd. valued at $52,275, against 300,954 valued at $80,724 in August. Yarn exports for September, 58,478 lb., had a value of $31,759, against 71,510 lb., value $34,801, in the previous month. Only 12,259 doz. pr. of rayon hosiery were exported in September, against 14,827 in August.

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French Favor "Rayon"

The trend toward world acceptance of the word "rayon" as a generic term representing synthetic fibers is considered by the domestic rayon industry to have been greatly strengthened by the news that the International Silk Federation in Paris has endorsed the official use of this term. According to information reaching the New York market, the Federation at a recent meeting in Paris passed a resolution urging official adoption of the word "rayon" as a substitute for the term, "artificial silk." Yarn producers and rayon merchandise manufacturers here expressed gratification at the report, emphasizing that the term "artificial silk" has been made obsolete by the growing tendency to accept rayon on its own merits and without respect to other textiles.

Stress Development Work

The concentrated effort now being exerted by various producers toward improvement of pigmented viscose process yarns suggests that these yarns will be considerably more important during spring. It is pointed out that these yarns have especially good merchandising possibilities due to their low production costs, which permit a low selling price, thus offering a better margin to the consuming industries. Fashion continues to favor dull viscose fabrics, despite the glamor trend, and producers report instances where mills which specialize in fine fabrics have bought the dull viscose yarn in preference to the dull acetate.

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A Word to the Wise

Rayon producers will do well to utilize the present lull in buying to fill in and balance their stocks of yarn before the end of the year, it is pointed out in the November issue of *Textile Organon*, published by the Tubize Chatillon Corp. This publication sees signs indicating "a gradual rise in demand in the spring months."

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Spun Rayon Active

Contradicting the general end-November slackening of yarn orders, weavers have shown decided interest in spun rayon yarns and spinners report continued activity at this end. Behind the spun rayon movement is a conviction that this merchandise is due for spirited movement through the spring season. Weavers who are hesitant in their commitments on other yarns are pressing their sources of supply for early delivery of spun rayon.

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Fashion Group in New Offices

The Fashion Group, composed of leading mill and retail stylists, is now completely installed in its new quarters in Rockefeller Center, New York; the Fashion Group office is located at Room 7, on the mezzanine floor, while the Group's exhibition room which seats 500 is on the seventh floor of the building.

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Franklin Moves N. Y. Office

The New York office of the Franklin Rayon Corp. has been moved from 40 Worth St. to the Nelson Tower Building, at 450 Seventh Ave. The new location, which is in the center of the uptown ready-to-wear and rayon piece goods district, is expected to facilitate the company's service to these industries.

RAYON IN THIS ISSUE

	page
Code Authorities Concentrate on Code Application	60
Fashion Hails New Note of Glamor in Textiles	63
Modern Style Brocade—Abstract Effect	79
Throwing Illustrated—Recent Changes Stressed	87
High-Speed Rayon Pot-Spinning Machine	95
Two-Purpose Shuttle	97
Rayon Spinning Pot	97
Rubber Belt for Silk and Rayon Spinners	97
Tinting Spun Rayon	102
Reediness in Rayons	103
Handkerchief Constructions	103

Celanese Accents Crepes

Acetate crepes are highlighted as a major spring fabric line in the current offerings of the Celanese Corp. Among the novel weaves stressed by Celanese, and which are exciting attention for southern resort wear, are printed satins and mossy crepes. These are available both in daytime designs and in delicate shades for evening wear.

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New Plant in Japan

Further evidence of Japan's determination to develop rayon yarn production as a major industry is seen in reports from Yokohama that the Kanegafuchi Spinning Co., of Takasago, will soon begin construction of a rayon plant. Dispatches state that the plant will occupy a 245-acre tract and will have an ultimate output capacity of 5 tons daily; viscose process will be used. The project is especially significant in that this company also plans to erect a plant for manufacture of the chief chemicals needed in rayon manufacture. It is pointed out that this latter move will be an innovation for Japan, and will tend toward making her industrially independent of other nations.

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Industrial Outlines Expansion Plan

An extensive program of expansion which might ultimately involve an outlay of $9,000,000 is being considered by the Industrial Rayon Corp., Cleveland, it was disclosed Nov. 22 by Hiram S. Rivitz, president. Mr. Rivitz added that this projected plan would add about 2,500 more persons to the payroll and would bring Industrial's output capacity to nearly 24,000,000 lb. annually.

While this program is just being tentatively considered, the firm is proceeding toward a more modest expansion which would cost about $2,000,000, would add 800 to 1,000 to the personnel, and would increase output at the Cleveland plant from present figures, 7,000,000 lb. to 12,000,000 lb. annually. This program has been approved by the board of directors, subject to the construction by municipal and Federal authorities of a three-mile sewer in Cleveland. The sewer would cost $350,000, of which Industrial would pay $25,000, the remainder being shared by the City of Cleveland and the Federal Government. The sewer would be used exclusively by the rayon firm to carry waste matter directly to the city's disposal plant on Lake Erie. News of the program was made known through the introduction in the City Council of Cleveland of legislation approving construction of the sewer, which legislation was approved later by the council.

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Rayon Mill News

New Bedford (Mass.) **Rayon Co.** paid a dividend of $1.60 a share Nov. 17 to stockholders of Class A stock.. This is the second dividend paid by the company which was organized in 1928, and began production Jan. 1, 1929.

Maco Mfg. Co., Brooklyn, N. Y., which purchased one of the buildings of Deep River Mills, Randleman, N. C., will install machinery there for the manufacture of rayon woven goods.

American Enka Corp., Enka, N. C., recently awarded contract to Potter & Shackelford, Inc., Greenville, S. C., for erection of superstructure of new plant addition. Other contracts let were: pile driving, McArthur Concrete Pile Corp., New York, N. Y.; foundation work, John M. Geary Co,. Asheville, N. C.; structural steel, Carolina Steel & Iron Co., Greensboro, N. C.; and sewer work, Reed & Abee, of Asheville.

Altoona (Pa.) **Rayon Weaving Co.**, recently organized, has leased plant of former Altoona Textile Co., and will remodel and improve for occupancy.

Dominion Textile Co., Ltd., has completed installation of new rayon yarn preparation equipment, including warper and slasher, in its Verdun branch at Montreal, Que. The company will weave a variety of rayon crepes.

TEXTILE WORLD'S

Knit Goods Digest

MANY complaints have been heard that shoe chains are using hosiery as a bait for shoe sales and are underselling retail outlets all over the country, thus tending to weaken hosiery prices for the mill and the store.

We put this question up to a friend who is in close touch with the shoe distribution field. He readily admitted the charge but pointed out that both national and local retail code authorities are working feverishly to perfect regulations which will check this and similar forms of unfair competition.

Our advice to hosiery manufacturers is to collect every bit of evidence available and to pass complaints to the NRA. We believe the code authorities involved will welcome them.—*Editor.*

Hosiery Leaders Sift Many Trade Problems

Development of a uniform sales contract, control of production, and more adequate enforcement of the NRA code, were the highlight subjects considered during the month by hosiery industry groups in cooperation with the National Association of Hosiery Manufacturers. The industry's leaders spent an active four weeks on current problems, the activity centering on meetings held during the third week of November at the Waldorf-Astoria Hotel, New York.

The committee on production control which was set up by the Hosiery Code Authority met on Wednesday, Nov. 22 and considered this question, its report being submitted later to the Code Authority, which convened at the Waldorf Nov. 23-24. Added interest was lent to the Code Authority meeting, in that it marked the first official appearance of Dr. George W. Taylor, of Philadelphia, who had just been appointed assistant deputy administrator of the hosiery code.

Among the methods of production control considered was the idea of reducing operation of hosiery machines to 30 hours weekly, but this proposal was discarded temporarily by the Code Authority on the grounds that the 40-hour week had not been given a sufficiently long trial. A hearing on the curtailment question was to be held in Washington, D.C., Dec. 11.

The Authority also took under consideration a proposed sales contract for the industry, a draft of which contract was submitted to the Authority. This proposed contract stipulates conditions of sale including the following: The order is governed by the NRA hosiery code; order is taken subject to acceptance by the mill; order is taken subject to delays, partial or non-delivery caused by conditions beyond control of the manufacturer, in which case manufacturer shall notify buyer promptly and buyer must cancel or confirm within 10 days, failure to do either being construed as cancellation; prices are based on present costs of hosiery; all claims shall be settled by arbitration according to rules of American Arbitration Association.

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Push Outerwear Show Plans

Reservations totalling 7,000 sq.ft. have been made for the Second National Knitwear Industrial Exposition to be held at Grand Central Palace, New York, Feb. 12-16, 1934, it was announced Nov. 28, by A. B. Coffman, exposition manager. The National Knitted Outerwear Association which is sponsoring the exhibition, has appointed a committee of 15 to take charge of arrangements; the committee is headed by A. Paul Cohen, of Suffolk Knitting Mills, as chairman.

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Woolen Hosiery Institute Formed

With the aim of solving their industry problems through cooperative action, a representative group of manufacturers of bundle wool and wool mixed hosiery held a meeting in Cleveland, O., last month, at which they formed Woolen Hosiery Institute of America. The officers are: Caleb Smith, of Seneca Knitting Mills Co., Seneca Falls, N. Y., president; John L. Fead, of John L. Fead Sons, Port Huron, Mich., vice-president; and J. B. Glasner, of Rockford Mitten and Hosiery Co., Rockford, Ill., secretary. It was stated that the new organization will cooperate with the National Association of Hosiery Manufacturers.

New Underwear Standards

Standards of minimum measurements for men's woven underwear which had been developed by Charles H. Hamlin, as research associate, for the Underwear Institute, were submitted to the underwear industry at a meeting held in New York, Nov. 13, and were unanimously approved. These standards apply only to those suits having knit webbing in the back. Standards for other types of woven underwear are being developed and the entire group when complete will be proposed for adoption as a commercial standard of the U. S. Bureau of Standards.

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Seamless Hosiery Committee Complete

With the addition of W. W. Staudt, of D. S. & W. Hosiery Co., Reading, Pa., as representing Northern mills, the Ladies' Seamless Advisory Committee of five to represent seamless mills in administrating the hosiery code, is now complete. Announcement of the entire committee was made Nov. 22 by the National Association of Hosiery Manufacturers as follows: Charles L. Amos, Melrose Hosiery Mills, High Point, N. C., Leroy Mann, Newnan Hosiery Mills, Newnan, Ga., Tom Tarwater, Harriman Hosiery Mills, Harriman, Tenn., James N. Weeks, Hanes Hosiery Mills Co., Winston-Salem, N.C., and Mr. Staudt. The creation of the committee was authorized in Article IX, section 2 of the code.

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Says Chains Weaken Hosiery Prices

Continued below-market retailing of hosiery by chain shoe stores was declared by leading hosiery manufacturers at the end of the month to be holding back progress in an otherwise rather encouraging market. While hosiery buying generally has not been active, prices have been steady, except for the division affected by the shoe store situation. Hosiery distributors both in Pennsylvania and New York asserted that the low prices charged by the shoe stores has seriously upset both mill and distributor prices. According to the complaining firms, the shoe stores accept losses on hosiery sales with the aim of making up the difference on shoe sales, the hosiery being just an inducement.

Hosiery manufacturers assert that if this difficulty could be cleared up their outlook for the coming year would be fairly satisfactory. Concentrated effort is being exerted by manufacturers to develop new hosiery styles to justify the upward price trend, this effort extending in some cases through the whole promotional program including new methods of packaging, etc.

Light Demand For 1934 Outerwear Lines

Active interest but backward buying marked the first weeks following the mid-November opening of 1934 outerwear lines. Prices in a number of cases were 70 to 80% above last year, reflecting increased cost both of raw materials and manufacture, and this served somewhat to deter advance commitments. However, style has been given an unusual emphasis, and this is expected to surmount the price factor, at least among women's lines. Women's bathing-suits opened very firm, and the outlook at this end is considered quite promising, thanks to the wide variety of attractive new models in backless suits and distinctive color combinations.

The price increase on volume lines of swimsuits gives retailers the problem of increasing their selling price nearly 100%, or from $1.98 to $3.95, to specify the best selling range, which promises to bring resistance unless mills keep their levels fairly uniform.

In early December market interest centered on the challenge made by four leading Cleveland mills against the authority of the regional labor board, which had ordered employe elections at the mills.

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Helps Underwear Sales

The start of December found the heavyweight division of the knitted underwear market in fairly good position, thanks largely to the cold snap which spread across the country at the beginning of November. This drop in temperature stimulated retail clearance of underwear stocks, bringing a sharp reorder business.

Reordering was most active in the North Atlantic States, though good buying also was reported from the wheat belt. Underwear stocks in mills are not abundant, and indications point to only moderate inventories at the end of the year.

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Underwear Code Violated, Is Charge

Charging that certain manufacturers of knitted rayon underwear fabrics are operating their machines three shifts of 40 hours each per week, Roy A. Cheney, secretary of the Underwear Institute, has advised the entire industry that this is in violation of the NRA code. Claim made by the knitters "that the temporary exemption granted by the NRA to knitters of circular rayon fabrics to operate three shifts permits them so to operate their machines on rayon mixture fabrics other than straight rayon, is wrong," Mr. Cheney added.

Continued operation of knitting machines for more than two shifts of 40 hours weekly on fabrics other than straight unmixed rayon fabrics for underwear purposes renders the manufacturer subject to the penalties of the recovery act, the secretary announced.

KNIT GOODS IN THIS ISSUE

	page
Eliminates Guesswork in Grading Silk Hosiery	64
Specifying Presser Cuts—Tips for Knitting Design	74
Determines Fabric Compressibility	97
Distorted Stitches in Hosiery	102
Spot on Knit Goods	103

Knitting Mill News

Jordan Textile Mills, Inc., Columbus, Ga., have been chartered by officials of Perkins Hosiery Mills, with local plant, to operate as an affiliated organization, manufacturing and marketing allied products. New company is headed by R. C. Jordan and John A. Mitchell, president and vice-president, respectively, of Perkins company.

Amazon Knitting Co., Muskegon, Mich., is to build an addition of about 4,800 sq. ft. floor space to provide for expansion of the cutting room.

H. H. Wood Hosiery Co., Lakeport, N. H., has bought the stock and machinery of the Pitman Mfg. Co., Lacoma, and will remove same to Lakeport. Joseph P. Pitman will join the Wood organization as superintendent.

Atlanta Knitting Mills, 2897 Atlantic Ave., Brooklyn, N. Y., have concluded negotiations for acquisition of the former Union Mills, Catskill, N. Y., and will occupy for branch plant for knit underwear production. Improvements will be made and equipment installed. It is proposed to employ about 400 operatives.

Murray Knit Wear Co., New York, has leased space in the Lion Building, Troy, N. Y., and plans to start production of sweaters and other knitted products in the near future.

Hillcrest Mills, Inc., has been established at 585 Broadway, New York, by Abraham Hausman for the manufacture of knitted fabrics. Mr. Hausman recently withdrew from the Novelty Knitting Mills, New York. In his new location he operates 38 Wildman knitting machines, 14 Tompkins tables, 14 wool winders and 8 braiding machines.

McLoughlin Textile Corp., Utica, N. Y., is expected to turn over its nainsook mill to Lee Dwyer, of Indianapolis, as a result of recent court proceedings.

Olga Knitting Mills, Watertown, N. Y., plans to install 35 new knitting machines.

Hudson Silk Hosiery Co., Charlotte, N. C., has incorporated to manufacture and deal in various textile materials. Authorized capital stock, $1,500,000. Incorporators are F. Seifart, M. E. Pierson, Mary Pierson and Anna M. Seifart, all of Charlotte.

Okey Hosiery Co., Charlotte, N. C., has been organized by Charles L. Okey, George E. Wilson, Jr., and George L. Sibley, all of Charlotte, with authorized capital of $100,000 preferred stock and 1,000 shares of common stock with no par value.

Durham Hosiery Mills, Durham, N. C., has paid an arrears dividend of 50c. on its 6% cumulative preferred stock.

Plymouth Hosiery Mills, Inc., High Point, N. C., lately formed with capital of $100,000, have taken over former local plant of the Royal Hosiery Mills. Improvements will be made, including intallation of additional equipment. W. A. Davis and W. S. Swain head the new organization; last noted was formerly connected with the Crown Hosiery Mills, High Point.

Adams-Mills Corp., Kernersville, N. C., new unit has been put into operation with 200 operatives. Between 300 and 400 machines were moved from the High Point (N. C.) plant of this company to Kernersville.

Shoaf-Sink Knitting Co., Lexington, N. C., recently organized by J. T. Hedrick, Lexington, and associates, has taken over former mill of the Shoaf-Sink Hosiery Mill Co., and will operate for hosiery production.

Rubin Knitting Mills Co., Cleveland, Ohio, has been incorporated with capital of 250 shares. Principals of the new firm are I. Ganger, A. H. Ganger and G. H. Wieder, with headquarters in the East Ohio Gas Bldg.

Jantzen Knitting Mills, Portland, Ore., and British subsidiaries report for the fiscal year ended Aug. 31, 1933, net profit of $105,434. This compares with a net loss of $118,192 in preceding fiscal year. Net sales totaled $1,881,104 against $2,103,739. Current assets as of Aug. 31, last, including $619,275 cash, amounted to $1,308,919 and current liabilities were $57,295. This compares with cash of $666,320, current assets of $1,287,629 and current liabilities of $57,-164 on Aug. 31, 1932.

Ellis Silk Hosiery Co., Philadelphia, has discontinued its branch at Charlotte N. C., removing its 18 machines to the Philadelphia plant.

Endurance Knitting Co., Philadelphia, Pa., has taken title to a two-story building, on site 76 x 160 ft., on Hasbrook St., near Cottman St., and will occupy for mill.

Hanson Woolen Mills, Hull, Que., sock manufacturers, have purchased the plant of the York Wool Sock Co., at Almonte, Ont., idle for many years. The plant has been placed in full operation.

Regent Knitting Mills, Montreal, Canada, enjoyed in October the best month from the point of view of volume, since the war. The plant at St. Jerome has been operating at full capacity for some time now.

TEXTILE WORLD'S

Processing Digest

MERITING the highest praise is the way in which the textile processing industry is working out the difficult problems of organization and eliminating overlapping of code jurisdiction. A few months ago, only the cotton finishers had more than the semblance of a central organization. Today the silk and rayon finishers—formerly split up into four different organizations—are united almost 100% in the Institute of Dyers & Printers; job dyers of raw stock, yarns, hosiery, woolens and worsted—sixteen groups in all—have come together in the National Textile Processors Guild, Inc. Trade-practice codes for each of these three major branches have been evolved, which take into consideration the interests of each of the various sub-divisions; joint committees have been appointed to establish jurisdictional responsibility in the few places where conflict in authority still exists. This progress has not been easy; it has called for untiring efforts by many, sacrifices by all.—*Editor.*

Silk and Rayon Converters Organize

At a meeting of silk and rayon converters held early last month in New York, Sol Moss, chairman of the converters division of the Silk Association of America (now the Federated Textile Industries, Inc.), was selected as executive director of the newly formed Converters Association of America, Inc. Later in the month (Nov. 21) decision was made by the executive committee to affiliate with the Federated Textile Industries, Inc., when the formalities involved in the change in organization of the latter body are completed.

Some converters of cotton and cotton-rayon fabrics who are members of the Textile Fabrics Association (formerly the Textile Converters' Association) and who received invitations to join the new organization expressed their objections both to its name and scope as first announced. Organizers of the new body replied that it was established chiefly for silk and rayon converters and was not formed with the intention of competing with any existing organization. Among the functions of the association will be the establishment of a credit bureau.

•

Many New Products at Chemical Show

Many new products developed within the last two years attracted the attention of textile chemists and operating executives who visited the fourteenth Exposition of Chemical Industries, held in Grand Central Palace, New York, Dec. 4 to 9. Of importance to textile men were those exhibits featuring corrosion-resisting materials; power transmission equipment; extractors and dryers; recently developed solvents, detergents, strippers, and other chemicals; indicating, recording, and control instruments; daylight lamps for color matching; and laboratory supplies and equipment. Also of particular interest were displays of new textile products, including waterproofed fabrics obtained by treating the goods with a flexible synthetic resin compound; another type of waterproofed fabric made by impregnating the material with a pyroxylin solution, and a suede-effect fabric produced by coating cotton goods with rubber, applying flocks to the semi-plastic surface, and vulcanizing. The tremendous advances made by the chemical industries was shown vividly by the display in the booth of the American Chemical Society of over 100 new products first developed or made commercially available since the last exposition held in 1931.

•

Oiled Silk Produced By New Process

Development of a new process for the production of lightweight, transparent, oiled silk has been announced by General Electric Co. The silk is of a special construction woven in Japan and processed at company's plant in Lynn, Mass. The fabric is said to be water- and acid-proof and of good durability. Suggested uses are for raincoats, capes, hat bands, shower curtains, etc. Blossom Mfg. Co., 79 Madison Ave., New York, is sole distributing agent.

•

Cluett, Peabody Gets New Shrinkage Patents

Acquisition by Cluett, Peabody & Co. of all preshrinking patents granted to John H. Wrigley and Alexander Melville, of the Bradford Dyers Assn., Ltd., England, is expected to lead to the expansion in this country of controlled shrinkage to the sheer cotton fabrics and rayon fields. Under the new arrangement the Bradford Dyers Assn. is licensed to operate under all preshrinking patents controlled by Cluett, Peabody. Among the patents involved are British patents Nos. 371,146; 371,976; and 372,803 granted in 1932. With the equipment and processes covered in these patents, shrinkage is effected by bringing the fabric in contact with a flexible blanket of rubber or other suitable material which passes over two rotating cylinders. Contact is first made at the point of greatest curvature of the rubber blanket. When this point is passed, the stretched blanket returns to its normal length, causing the fabric in contact with it also to contract warpwise. The amount of shrinkage is controlled by the radius of curvature of the cylinders and the thickness of the blanket. Provision is also made for pressing the fabric with a heated metal device immediately after it has contracted, thus fixing the shrinkage and enhancing the luster of the goods.

•

Standards Association Considers Shrinkage Tests

Further research as a basis for standards for the shrinkage of woven cotton goods was decided upon by a meeting held Nov. 21, in New York, under the auspices of the American Standards Association. Consideration of a proposal for shrinkage standards, submitted by the Shrinkage Textile Conference of the New York Board of Trade, led to the decision that for the present the association will limit its efforts to piece goods as sold to the purchaser, leaving the question of shrinkage of finished garments to future consideration. It was unanimously agreed to adopt as a basis for research, and for the administration of standards, the method of test for shrinkage included in the "Federal Specification for Textiles; Test Methods." These methods are identical with the methods approved by the American Association of Textile Chemists & Colorists and the American Society for Testing Materials. A committee will be appointed by the chairman to carry on further investigation and to report its recommendations at a later meeting.

A.A.T.C.C. Notes

The annual business meeting of the American Association of Textile Chemists and Colorists was held in the Chemists Club, New York, on Dec. 8. Officers reelected were: president, Robert E. Rose, E. I. du Pont de Nemours & Co.; vice-president, Alex Morrison, American Woolen Co., treasurer, William R. Moorehouse, National Aniline & Chemical Co. Newly elected were the following: vice-president, A. R. Thompson, Jr., Ciba Co., Inc.; secretary, Harold C. Chapin, Lowell Textile Institute; councilors-at-large (for 3 yr.), Joseph F. X. Harold, consulting chemist; Donald H. Powers, Röhm & Hass Co.

An address by Earl Hays, of Hays Laboratories, Pawtucket, R. I., on "A New Method of Spectro-analysis," during which he demonstrated the "Hays Tele-Color," featured the monthly meeting of the Rhode Island section of the American Association of Textile Chemists and Colorists which was held Nov. 24, in Providence, R. I. C. O. Conley, assistant director of merchandising service, Collins and Aikman showed a motion picture entitled "Velvet, King of Fabrics."

•

Employment Rises 25%

A 25% increase in employment in the silk and rayon dyeing and printing industry since July 24, when this industry went under the temporary code, was made known Nov. 10, by Charles L. Auger, president of the National Silk Dyeing Co. and the Institute of Dyers and Printers. Mr. Augur made the announcement at the hearing on his industry's code which was held before Assistant Deputy Administrator Morrow in Washington. Mr. Auger said that while "it would be an exaggeration to say that all of us are imbued with the NRA spirit, yet we are progressing in that direction."

•

Celanese May Drop New Finishing Plan

Prospects that the Celanese Corp. of America might build a large dyeing plant, which have agitated the finishing industry for several weeks, appeared to have lessened toward the latter part of November with the report that finishers would reduce the prices they quote for handling Celanese fabrics. The Celanese company made known through an official that its market for yarns, especially those going into crepes, was jeopardized by high finishing costs. These costs, it was contended, were "descriminatory."

With the aim of lowering finishing costs for their customers, Celanese has given serious consideration to the idea of buying or building a finishing plant. At present, the firm has one dyehouse at Cumberland, Md., but this is used solely for the company's own fabrics and would be inadequate to serve the purpose of the firm's yarn customers. The price of finishing acetates has averaged 16c. per yard.

It was later reported that the Tennessee-Eastman Corp., of Kingsport, Tenn., was considering similar action.

•

Softening Agent

A new softening agent for rayon or mixed fabrics of rayon and cotton is announced by the General Dyestuffs Corp. It is stated that the agent imparts a smooth soft handle to the material. The agent is known as Soromine N Powder and it may be used in the dyebath or aftertreatment. According to the manufacturers, the product is practically neutral in reaction; its resistance to lime is excellent, and it is especially suited to white goods, as it does not form yellow tints.

•

Velvet Finishers May Accept Silk-Rayon Code

Progress toward adjustment of differences of opinion with respect to the silk and rayon dyeing and printing codes was made during November, as result of conferences between officers of the Institute of Dyers and Printers and representatives of the velvet manufacturers. One chief bone of contention was whether the velvet group would go under the cotton finishing code or that of the silk and rayon manufacturers. Robert F. Salembier, secretary of the Institute of Dyers and Printers, expressed confidence, following the negotiations that the velvet group would follow the lead of the rayon division and come under the code of the silk and rayon finishing branch.

•

New Dyestuffs

National Aniline & Chemical Co., Inc., announces the following new product:

National Alizarol Cynanine KC, a mordant dye giving bright reddish blues of excellent fastness to sea water, perspiration, and rubbing; good fastness to washing, fulling, potting, cross dyeing, and alkali spotting; and fair fastness to light. Cotton, rayon, and acetate are unstained.

General Dyestuff Corp. announces the following new products:

Indanthren Scarlet 4G paste, a homogeneous vat dye giving yellowish scarlet shades on cotton, rayon, and pure silk; dyeings have excellent fastness to light, washing, and chlorine.

Indanthren Direct Black G and KK pastes, two direct dyeing vat colors giving bloomy, black shades of very good to excellent fastness to light, washing, chlorine, etc.

Fast Orange Salt RD, a fast color salt of interest for printing Naphtol as prepared goods, as well as for discharge and resist styles. Shades produced with Naphtols AS, AS-KL, and AS-OL have very good fastness to light and excellent fastness to washing and chlorine.

•

Finishing Plant News

Lanett (Ala.) **Bleachery & Dye Works** have completed the $150,000 addition, and machinery is being installed with the hope of putting it into operation by Dec. 15. About 100 additional operatives will be given work. Hope Tignor and Gus Turner will be in charge. A new 500,000-gal. water tank is being constructed.

Crystal Springs Bleachery, Chickamauga, Ga., has installed Hygrolit yarn conditioning equipment.

Millbank Finishing Corp., Passaic, N. J., recently chartered with capital of 20,000 shares of stock, no par value, plans operation of local dyeing and finishing mill. New company is headed by Joseph V. and John H. McGuire, 663 Main Ave., Passaic.

Puritan Finishing Mills, Inc., Burlington, N. C., has been chartered to manufacture and sell all kinds of hosiery. Authorized capital is $10,000, with $400 subscribed by P. R. Owen, D. M. Davidson, J. W. Burke of Gibsonville, and Dave DeMoss of Burlington, several of whom are officials of the Gibsonville Hosiery Mills Co.

Sayles Finishing Plants, Inc., Saylesville, R. I., have awarded contracts to Temple & Crane, Inc., Boston, Mass., for plant additions comprising a one-story manufacturing building, 55 x 72 ft., of steel and wood; a two-story service tower of brick and steel; a four-story elevator and stair tower of brick, concrete and steel; and miscellaneous alterations.

PROCESSING IN THIS ISSUE

	page
Code Authorities Concentrate on Code Application	60
Finisher Saves $20 Daily at One Machine	70
Warp Mercerizing—Omits Preliminary Boil-Out	72
Heat Reflecting Properties of Dyed Wool	76
New Products and Techniques Discussed by ASME	82
Multipass Airlay Dryer	95
Automatic Dye Reversing Valves	96
Uneven Dyeing on Cotton Yarn	103

QUOTATIONS

At close of business, Dec. 1, 1933

Prices cover average qualities unless otherwise stated.

Cotton Goods

	*Dec. 1	*Nov. 1	Dec. 1 1932
PRINT CLOTHS			
27-in., 64x60, 7.60	4⅛	4⅛	2⅛
38½-in., 64x60, 5.35	6⅛	6⅛	3⅛
39-in., 68x72, 4.75	7⅛	7⅛	3½
39-in., 72x76, 4.25	8⅛	8⅛	3⅝
39-in., 80x80, 4.00	9	9	4½
BROWN-SHEETINGS			
36-in., 56x60, 4.00	7⅛	7⅛	3⅛
36-in., 48x48, 5.00	5⅞	5⅞	2⅞
37-in., 48x48, 4.00	6⅛	6⅛	3⅛
MISCELLANEOUS			
Drills, 37-in., 3 yd.	9½	9½	5
Denims, 2.20	15½	15½	10½
Tickings, 8 oz.	18½	20	11
Standard prints	7	7⅛	6⅛

*Tax included.

Cotton Waste

Peeler comber	10.00c
Peeler strip	9.50c
White spooler (single)	5.50c

Cotton Prices

Spot Cotton at:	Dec. 1	Nov. 1	For Month High	For Month Low	1932 Dec. 1
New York	10.20	9.75	10.25	9.55	5.95
New Orleans	9.85	9.45	9.94	9.28	6.04
Liverpool	5.15	5.48	5.48	5.06	5.43

FLUCTUATIONS OF FUTURES

	Closed Dec. 1	For Month High	For Month Low	Closed Nov. 1	Net Change
Dec.	9.91	10.11	9.35	9.55	+0.36
Jan.	9.97	10.18	9.41	9.61	+0.36
Feb.	10.03	10.20	9.49	9.68	+0.35
Mar.	10.10	10.33	9.57	9.76	+0.34
April	10.16	10.34	9.63	9.81	+0.35
May	10.22	10.48	9.70	9.87	+0.35
June	10.29	10.48	9.77	9.95	+0.34
July	10.36	10.60	9.85	10.03	+0.33
Oct.	10.56	10.78	10.05	10.19	+0.37

AVERAGE PRICE JUNE-JULY SHIPMENT HARD WESTERN COTTON

F.o.b New England

	Middling	St. Middling
1⅛-in.	12.60	13.85
1 3/16-in.	13.85	15.35
1¼-in.	17.10	19.10

Based on March 10.10

FOREIGN COTTONS

Alexandria Exchange, Dec. 1

January, Sak.	12.40
December Uppers	9.80
Nov.-Dec. Shipment c.i.f. Boston (Tariff not included)	
Medium Sak.	24.00
Medium Uppers	20.00
(By Anderson, Clayton & Co.)	
India Rough, Calcutta Camilla	10.50
China Tientsin No. 1	12.75

Quotations on cotton cloth and cotton yarn as given on this page include the cotton processing tax. Where figures for dates earlier than Aug. 1, 1933, are given for comparison, such figures of course do not include this tax.

Cotton Yarn (Nominal)

(Tax Added)

CARDED (Average Quality)

Double Carded 2c—4c., higher according to quality.

SINGLE SKEINS OF TUBES (Warp Twist)

4s to 8s	$0.25½	20s	$0.29½
10s	– .26	24s	– .32
12s	– .26½	26s	– .33
16s	– .28	30s	– .35

TWO-PLY SKEINS AND TUBES

8s-2	$0.26	20s-2	$0.29½
10s-2	– .27	24s-2	– .32
14s-2	– .28	30s-2	– .35
16s-2	– .28½	40s-2	– .45

SINGLE WARPS

10s	$0.26½	20s	$0.29½
14s	– .27½	24s	– .32
16s	– .28	30s	– .35

TWO-PLY WARPS

8s-2	$0.26½	20s-2	$0.30
10s-2	– .27½	24s-2	– .33
14s-2	– .28½	30s-2	– .35½
16s-2	– .29	40s-2 ordin.	– .45½

HOSIERY CONES (Frame Spun)

8s	$0.26	18s	$0.29
10s	– .26½	20s	– .30½
12s	– .27	22s	– .31½
14s	– .27½	24s	– .32½
16s	– .28	26s	– .33½

COMBED PEELER (Average Quality) TWO-PLY — (Knitting Twist) Cones

20s-2	$0.37	50s-2	$0.52
30s-2	– .42	60s-2	– .61
40s-2	– .48	80s-2	– .78

WARPS, SKEINS AND CONES TWO-PLY — (Warp Twist)

20s-2	$0.38	50s-2	$0.54
30s-2	– .43	60s-2	– .59
36s-2	– .46	70s-2	– .70
40s-2	– .49	80s-2	– .81

SINGLES

14s	$0.34	38s	$0.46
20s	– .37	40s	– .48
28s	– .40	50s	– .52
30s	– .41	60s	– .58

MERCERIZED CONES — (Combed, Ungassed)

30s-2	$0.54	60s-2	$0.75
40s-2	– .59	80s-2	1.00

Raw Silk

Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Special Grand, 85%	$1.65	$1.42½	$1.40
Grand XX, 83%	1.54	1.40	1.37½
Special Crack, 81%	1.49	1.37½	1.35
Crack XX, 78%	1.45	1.35	1.32½
Extra, Extra, 73%	1.42	1.32½	1.30
Best Extra, 68%	1.37	....	....

RAW SILK EXCHANGE

	Dec. 1	Nov. 1	For Month High	For Month Low	Net Change
December	1.33½	1.51	1.53	1.27	—0.17½
January	1.35½	1.51	1.54	1.30	—0.15½
February	1.36	1.51	1.54	1.31	—0.15
March	1.37½	1.51	1.54½	1.32½	—0.13½
April	1.37½	1.51	1.54½	1.33	—0.13½
May	1.37½	1.51	1.54½	1.33	—0.13½
June	1.37½	....	1.54½	1.33	....

Silk Yarns

Hosiery tram 5thd. Japan, 85%	$2.40
Hosiery tram, crack XX, 78%	2.20
60/2 spun silk	2.95

RAYON WASTE

Thread (for garnetting)	$0.15

Wool

OHIO, PENNSYLVANIA, ETC. (GREASE)

Fine delne.	$0.35 –$0.36	⅜ blood	$0.42 –$0.43
Finecltng.	.27 – .28	¼ blood	.41 – .42
⅛ blood	.35 – .37		

TEXAS AND CALIFORNIA (CLEAN)

Texas, 12 months	$0.80 –$0.82
California, Northern	.73 – .75

MONTANA, IDAHO, WYOMING (CLEAN)

Staple fine	$0.85 –$0.86
Staple ½ bld.	.82 – .83
Fine and fine medium (original bag)	.80 – .82
⅜ blood	.80 – .81
¼ blood	.72 – .74

EASTERN SCOURED PULLINGS

A.A	$0.93 –$0.95	B-Super	$0.77 –$0.79
A-Super	.83 – .85	C-Super	.68 – .70

CARPET WOOL (Nominal)

Aleppo (clean)	$0.19 –$0.22
Sining	.14 – .17
China filling (clean)	.15 – .18

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$1.16 –$1.17
Half-blood (60-62s)	1.12 – 1.13
Aver. ¾ blood (56s)	1.06 – 1.07
½ blood (50s)	.96 – .98

NEW YORK TOP FUTURES

	Closed Dec. 1	For Month High	For Month Low	Closed Nov. 1
December	106.00	107.00	99.70	99.70
January	106.40	107.00	100.50	100.50
February	106.40	107.20	100.50	100.50
March	107.00	107.30	100.50	100.50
June	107.30	107.60	100.50	100.50

TOPS — BRADFORD ENG. (Dec. 1)

Fine (64s)	38 d	¾ bld. (56s)	26 d
½ bld. (60s)	36 d	¼ bld. (50s)	19½d

NOILS — BOSTON

Fine	$0.56 –$0.58	¾ bld.	$0.51 –$0.53
Half bld.	.53 – .55	¼ bld.	.49 – .50

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 44s	$1.25 –$1.27½	2-36s 58s	$1.55 –$1.60
2-30s 46s	1.35 – 1.40	2-40s 60s	1.65 – 1.67½
2-30s mixes	1.80 – 1.85	2-50s 64s	1.80 – 1.85

ENGLISH SYSTEM KNITTING

2-20s 44s	$1.20 –$1.25	2-20s 60s	$1.45 –$1.50
2-20s-50s	1.27½– 1.30	2-20s 64s	1.50 – 1.55

FRENCH SYSTEM

1-26s 64s	$1.50 –$1.55	2-40s 64s	
1-30s 64s warp	1.60 – 1.62½	Zephyrs	$1.75 –$1.77½
		2-50s 66s	1.90 – 1.95

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	Price	Denier	Filament	Price
50	14	$1.25	150	24-40	$0.65
75	30	1.00	150	60	.70
100	40	.85	300	44	.55
125	36	.72			

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Denier	First Qual.
75	$1.05 –$1.10	150	$0.70
100	.90 – .95	175	.70

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.40	100	$1.10
60	1.25	120–125	1.05
75	1.15	150	1.00

CUPRAMMONIUM PROCESS (TWISTED)

Denier	Filament	Price	Denier	Filament	Price
30	24	$1.60	100	75	$1.00
75	60	1.20	150	112	.90

QUISSETT MILL

Incorporated 1910

Spinners of quality cotton yarns in all plys, twists, descriptions and put-ups. Spun from any cottons—Egyptian, Peeler, Peruvian, Pima, Sakelarides and Sea Island. Numbers from 20's to 100's, carded or combed. Also spinners of Quitex, a spun rayon yarn of distinctive qualities.

IF IT'S SPUN FROM COTTON,
IT'S SPUN BY QUISSETT

Quissett Mill
New Bedford, Mass.

Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY

- Insulating Yarns
- Thread Yarns
- Embroidery Yarns
- Plush and Drapery Yarns
- Yarns for Elastics
- Lace Yarns
- Shoe Fabric Yarns
- Crepe Yarns
- Cotton Backed Sateen Yarns
- Twister Cords
- Slub Stripes

QUISSETT Cotton Yarns AND Quitex Spun Rayon

FURFIBER

—Permanently Crimped Rabbit Fur for Spinning with wool, spun silk and rayon, or cotton

It won't brush out!

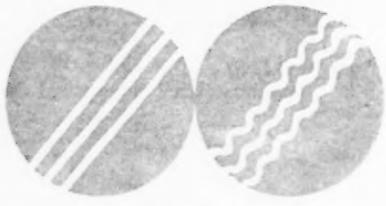
BY a new method in processing, rabbit fur is now successfully crimped so that it interlocks permanently with other fibers.

Yarns mixed with FURFIBER can be woven or knitted into fabrics of new softness and smoothness—fabrics which will not shed—fabrics which are ideal for top coats, sports coats, sweaters, etc.

Furfiber can be supplied in any quantity—in natural gray for dark shade dyeing or bleached for dyeing in light colors.

Send us your sample order for a sufficient quantity to try out in our mills, or ask us for the names of mills which can supply Furfiber yarn in any count desired.

Garments of FURFIBER satisfy the demand for better quality at reasonable prices. Be prepared to meet it by getting full information from



FURFIBER CORPORATION
370 SEVENTH AVENUE
NEW YORK

TELEPHONE—LONGACRE 5-7631

SAY! OUR COLORED YARNS ARE RUNNING FAR BETTER SINCE WE'RE "ON CORK"!

THAT'S NATURAL! DYE DOESN'T ATTACK CORK. WHAT'S MORE, THERE ARE FEWER EYEBROWS, LESS LAPPING UP, AND MORE EVEN DRAFTING.

YOU LICK at least *three* spinning problems when you change to cork cots for colored yarns.

First, cork will last considerably longer because the chemicals in the dyes can't harm it. Second, cork practically eliminates eyebrows—always a problem with colored yarns. And third, cork drafts out most of the slubs and bunches that other coverings let go through.

But it's not only in spinning colored yarns that Armstrong's Seamless Cork Cots give better service. For *any* type of spinning, these cots cut roll covering costs by as much as 60%—*proved* savings in mill after mill. And the quality of the yarn is equal or better.

Cork is less affected by humidity and hard ends. Because it greatly reduces lap-ups and clearer waste, practically eliminates eyebrows, it helps to save much productive time. Mill men have found—in numerous tests—that Armstrong's Cork Cots are superior to old-style roll coverings in every important particular.

Why not prove the truth of these statements right in your own mill? You can easily install a few test frames with Armstrong's Seamless Cork Cots—then watch the results. If you wish, we'll gladly send you reports of practical and impartial mill tests for your guidance. Just write to Armstrong Cork & Insulation Co., 924 Arch St., Lancaster, Pennsylvania.

Armstrong's
SEAMLESS CORK COTS

For Spinning and Card Room Rolls

SAFEST FOR DELICATE FABRICS

These quality olive oil soaps dissolve instantly—rinse freely

YOU'LL find this test convincing! In your own plant make a comparison of the results which the quality olive oil soaps listed at the right can bring you. Note the difference in solubility, in rinsing quality, in the way these soaps work. See and feel the difference in your finished goods. You'll find these soaps scientifically correct for the most delicate fabrics.

Greater safety plus greater speed, that's what modern processing demands! These soaps meet modern requirements in every particular. Their stronger high-tension suds work longer and better. Every batch, exactly like the last, assures uniformly satisfactory results.

No doubt about it! The 125 years of soapmaking experience has taught the Colgate-Palmolive-Peet Company how to make highest quality soaps. The world-wide leadership of their famous products proves it! Mail the coupon today for complete information.

TEXOLIVE KWIKSOLV
(An Olive Oil Soap)

Texolive Kwiksolv is an olive oil soap in spongy form. Its solubility and direct action will surprise you. (Contains 92% real soap.)

ARCTIC OLIVE OIL SOAP
(Bar, Bulk, Chip)

This soap is produced from 100% olive oil foots. Mild, neutral, rinses freely. Especially valuable in processing silks, woolens, rayons and similar fabrics.

TEXOLIVE (Bar, Bulk, Chip or Granules)

Texolive is identical to Arctic Olive Oil Soap, except that it contains a small percentage of coconut oil to produce additional sudsing qualities.

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Company .....
Position .....
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City ..... *State* .....

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Palmolive Building, Chicago, Illinois

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30's to 120's Combed, Natural and Mercerized. One, two, and three ply skeins, cones, tubes, and ball warps. Fugitive tinting in a wide range of shades.

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This means money in your pocket every year.

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Assure Economical Production

NO more streaks or stripes from chemical reaction in dyeing, where Aberfoyle *Durene* Yarns are used. Our new system of mercerizing assures you a perfect knitting, smooth finished yarn that dyes properly. Reduce your percentage of seconds from streaks after dyeing and make sure of evenly dyed merchandise.

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Designed and built for strenuous Textile Service

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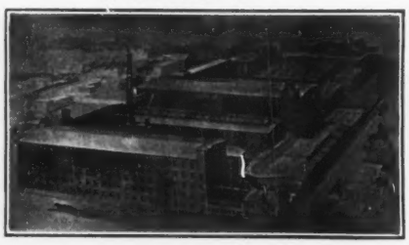

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—*the service* Enka *gives is your* "Plus"

The spinning of rayon yarn is one thing. It must be a precision operation to secure the demanded quality and uniformity.

The distribution of rayon yarn is another thing. It likewise must be a precision operation but more than that it must not be affected by any desire to write up orders.

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If you like this kind of service, consult an Enka representative. Fine yarn alone won't do—there must be fine service.

American Enka Corporation

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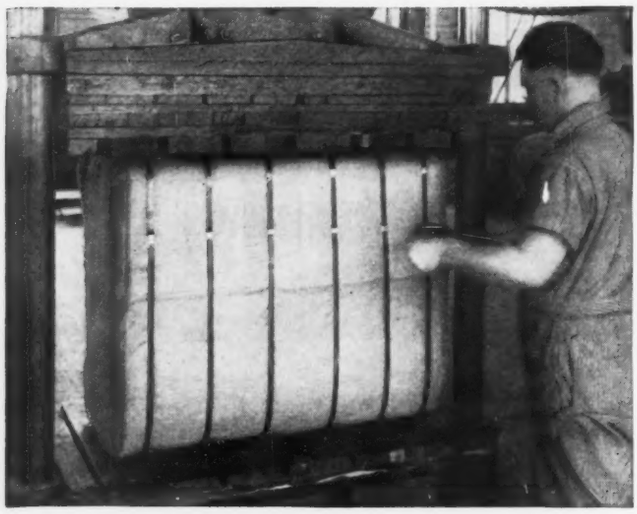

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Even the most critical executive cannot help admitting the logic of changing to Stanley Eversafe in view of advantages like these:

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Many minor cuts, digs and scratches, generally unreported, slow up tying operations. Round Safety Edges and Ends on Stanley Eversafe Ties prevent such injuries and speed up operations.

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Novelty yarns—of cotton, worsted, wool, mohair, rayon, silk—in all fashionable combinations and effects and in many original effects. Write for samples.

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WOOL & NOILS SCOURED, DEPAINTED CARBONIZED

WOOLEN & WORSTED, MIXED THREADS & CLIPS DESIZED, CARBONIZED. CARDED, CUT TO DESIRED LENGTH & GARNETTED.

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Universal Standard Ring Travelers *for Real Service*

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For Spinning and Twisting

IF YOU REQUIRE . . . . . .

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First Quality Frame Spun Yarns are produced only by using ring travelers that dispel any doubt as to their performance and manufacture . . . UNIVERSAL STANDARD RING TRAVELERS . . . meet these requirements, and more, effect a gratifying saving in ring and traveler costs by the extra measure of service and life they assure. . . . Order now. . . . Samples upon request.

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A Traveler for Every Fibre

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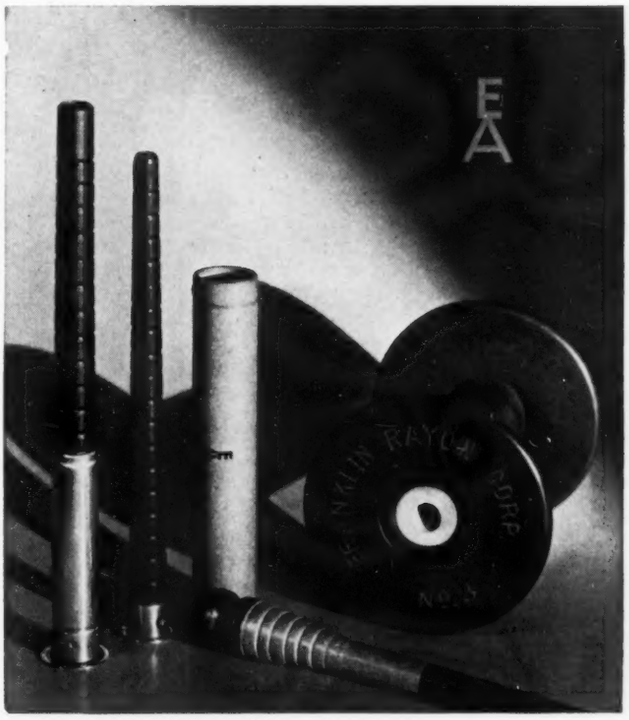
For Every Purpose



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ADOLFF spools, bobbins, cops, quills, and tubes are available in all types and sizes to meet your requirements

ADOLFF PRODUCTS
are used by leading mills throughout the country

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Samples and Prices promptly from

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of Inadequate Humidity

A drag on production and a drag on profits are humidifying facilities which are unequal to present day high speeds and are a barrier to lower production costs.

But why tolerate their handicaps? Outmoded air conditioning equipment can be replaced... insufficient equipment can be supplemented... quickly, with minimum interruption to operations, and at a cost very moderate in comparison to savings made possible.

Sturtevant is exceptionally well-equipped to serve you in this connection. It makes available to you its years of experience as a pioneer in textile mill air conditioning and its intimate knowledge of mill requirements.

Sturtevant also offers the assurance that you will get exactly the air conditioning equipment best suited to your needs. A most comprehensive line of Sturtevant Equipment, in both central system and unit types, is the guarantee.

● *Sturtevant Cooling and Air Conditioning Corp., a division of B. F. Sturtevant Co., is organized for engineering and installing complete Industrial and Comfort Systems.*

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A *NEW* SILK
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Brass feelers *cannot slip or become detached* due to special care in design. Two grooves in brass and top of brass turned into the wood give triple security. Brass base is countersunk below wood and is flush with wood. Made of seasoned Dogwood, satin-smooth finish. You'll agree it's an achievement!
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CARD STAMPING and REPEATING
for ALL TEXTILE FABRICS
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Because You Must Give More for the Money . . .

Get Cones that do the same for you!

You must give *your* customers more per dollar than ever before. To help cover yarn costs, use equipment and materials that do the same for you. Pairpoint Tubes and Cones give more life, more service for your money. They give you savings that you can pass on to your trade. They stand rough handling, and save cost of rewinding. If you ship yarn on cones, Pairpoint protects your customer goodwill by delivering the yarn safely, in good condition.

This big plant is ready to deliver any type of paper tube or cones on short notice, at mass production prices. Send samples or specifications for quotations.

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Globe Does Its Part —*On Time*

Dyers, Bleachers and Mercerizers of Cotton Skein Yarn and Warps

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Dyers of Rayon, Spun Rayon, Linen, Ramie and Jute Yarns

THE maintenance of precise production schedules today calls for alert, heads-up effort all along the line. Your processing choice is important. Globe's ability to meet exacting delivery dates is well known among the trade. A broad-gauged list of yarn processing services provides for a host of needs. And in drawing on this extensive line-up, you are also drawing on 70 years of experience coupled with progressive methods and modern equipment. Mill men are using Globe processing as an essential link in the production of outstanding knit or woven fabrics.

The time element—how are you meeting it? We stand ready to help. *Let's get together.*

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KINSEY AND WORTH STREETS
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GUARANTEED in weight, temper and style. Back of this guarantee is a 25-year experience, skilled workmanship, specially drawn stock, and an enormous amount of research and experiment in high speed traveler manufacture. Write for samples and prices.

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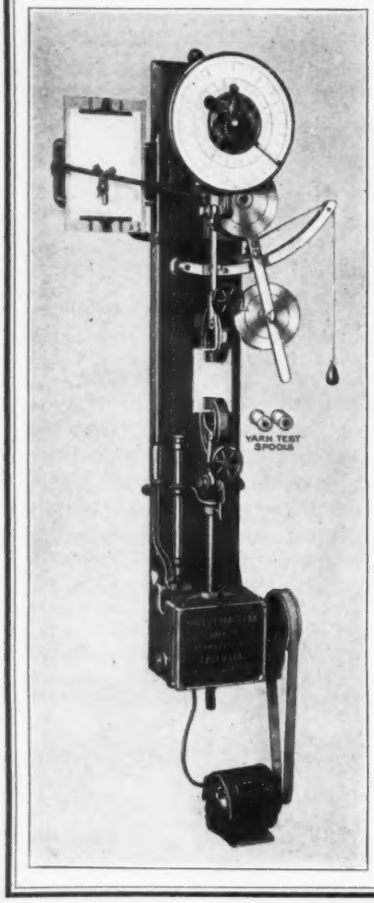
PEQUOT
is the most widely advertised sheet in America

PEQUOT SHEETS AND PILLOW CASES



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Model DH
for yarn and fabric

Complies in every respect with authoritative specifications.

INEXPENSIVE! EFFICIENT!

Accurate enough for laboratory use and constructed to meet the conditions of everyday routine work in the mill.

HENRY L. SCOTT CO.
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OUR SPECIALTY: We grade new woolen clippings ready for the picker. Write for samples and prices. Correspondence solicited.

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MEASURES SUNLIGHT FADING
Fade-Ometer— Indicates fastness to light of all colored materials
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Whether you use cotton yarns or cotton industrial threads, you can solve your Blue Eagle production problem if you specify Standard-Coosa-Thatcher.

Manufactured under our direct supervision in our own modern plants, these quality yarns and threads have a uniformity that yields more "firsts" per hour.

51 Years Spinning Experience

STANDARD - COOSA - THATCHER CO.
CHATTANOOGA, TENNESSEE
— *Branch Offices* —
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For faster twisting

look to your RINGS!

Twister production increases of as high as 20% on thread and 35% on tire yarns are being reported to us by users of

DIAMOND FINISH AUTOMATIC
OIL-LUBRICATED RINGS

The rings alone do this—no machinery changes. Such increases are made possible because of the 100% automatic oil-lubrication obtainable in the United States ONLY in rings manufactured by us under the Eadie patents. Look to your rings—your investigation may uncover possibilities equally great!

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RAILWAY EXPRESS

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Specify Railway Express on *all* your shipments and then you will be sure that your orders will be delivered safely and quickly either to your store or to your customer.

Railway Express is a single responsible organization with nation-wide coordination and team work that makes Rush a *reality* and not just a meaningless word.

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Tapes, Bindings and Narrow Fabrics

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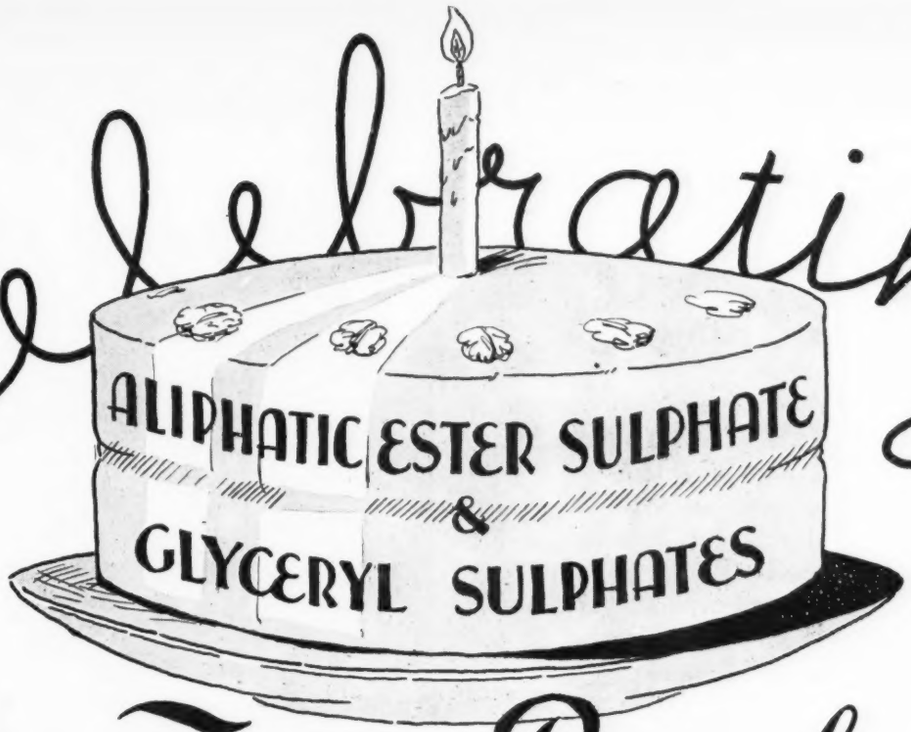

The First Birthday

ONE YEAR AGO—

The first announcement of ALIPHATIC ESTER SULPHATE and GLYCERYL SULPHATES carried statements which *then sounded* "too good to be true." To borrow from that first announcement:

". . . successors to and superior to ordinary sulphonated compounds . . . benefit every processing branch of the industry . . . raises old standards of results . . . produces finer fabrics than ever before possible—

". . . all operations on any fabric are performed with increased speed—less trouble—reduced operating cost . . . smaller quantities of compound are needed . . . saves dyestuffs . . . stable . . . penetrating . . . uniform . . . priced within reach of every mill."

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Three out of five orders coming into the Onyx offices call for a compound in the new series. Definite proof that the statements ARE true!

To borrow one more thought from the first announcement . . . "the most convincing story is told in an actual trial. Write stating operation and fabric, and a suitable sample will be sent."

ONYX OIL & CHEMICAL CO.

Specialists on Finishing Materials

Jersey City, N. J.

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MAHER COLOR & CHEMICAL CO., Inc.
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Aliphatic Ester Sulphate
For Penetrating and Wetting out in the dye bath. For Kierboiling, Throwing, Vat Dyes, Finishing and Printing.

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For Finishing, Softening, and Lubricating Silks, Rayons or Mixed Goods. For Hosiery Boil off, Silk Throwing and as a base for emulsions.

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For Softening and Finishing Cotton, Rayon, Silks, etc.

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ALUMINUM ACETATE 20% SOLUTION

Unsurpassed for mordanting and for waterproofing textiles, paper and leather.

Niacet Aluminum Acetate is a concentrated solution containing 5% Al_2O_3 but free of aluminum sulphate, aluminum chloride and similar undesirable impurities. It is perfectly stable under all ordinary atmospheric conditions and can be diluted without clouding.

Niacet Aluminum Acetate produces better results with less material.

Shipments made in 10 gal. kegs or 50 gal. barrels.

IRON ACETATE LIQUOR

also known as

Iron Liquor
Black Liquor
Black Mordant

NIACET IRON ACETATE LIQUOR sets a new high standard of purity and uniformity. No sulphates, no tars, no unpleasant odor but you do get better penetration and more even dyeing. Shipments made in 50-gallon barrels.

Samples and specifications on request.

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Glacial & U.S.P.
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Crotonaldehyde
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Agents in U. S. A. for Dunlop Concentrated 60% Latex, product of Dunlop Plantations, Ltd.

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ONE THING

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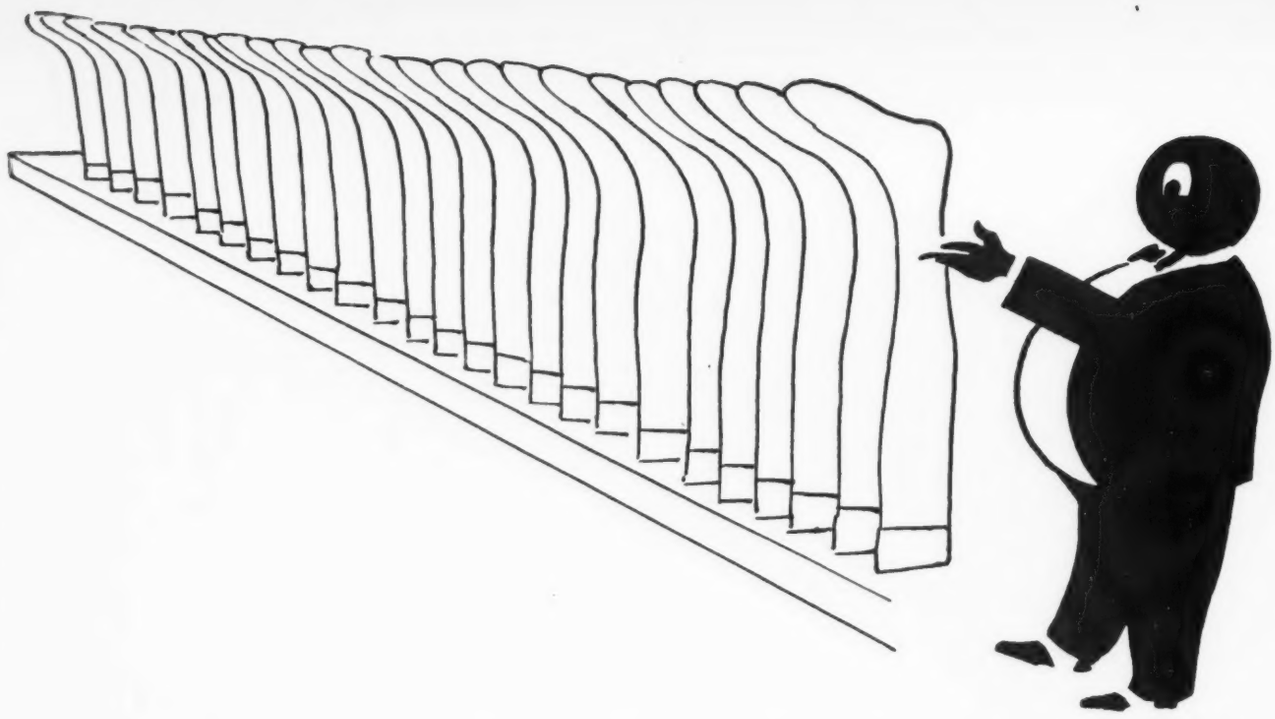

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wanted to introduce a number that could be recognized by a definite scent. He came to reodorizing headquarters. We recommended a

TEX-O-DOR

The hosiery won immediate acceptance. As a result, he is now treating his entire line with a Tex-O-Dor that gives a slight perfumed note.

Tex-O-Dors are aromatic chemicals added in small quantities to the finishing compound. They are effective — economical — easily introduced.

There are Tex-O-Dors which simply neutralize odors . . . others which produce a faint pleasant scent.

NRA
WE DO OUR PART

GIVAUDAN-DELAWANNA INC.

Industrial Aromatics Division

80 FIFTH AVENUE · NEW YORK, N. Y.

A Greeting and a Pledge

WITH sincere appreciation for the opportunity of serving you, we of The J. B. Ford Company earnestly hope that the joys of a very Merry Christmas will usher in for you a New Year that will more than fulfill your highest expectations.

Once again we pledge ourselves to a continuation of the policy established many years ago and which has met with your generous approval,—not only to supply you with the finest products, but also to render you every possible service and to observe the spirit as well as the letter of fair dealing.

Wyandotte PRODUCTS

The J. B. Ford Company

Wyandotte, Michigan

Sure She's Pleased

Good Fabrics are made perfect with "Brosco" Silk Finishes. The Hosiery Maker absolutely eliminates Guess Work and Uncertainty when he uses these well known and widely used Finishes:

"Brosco" Dull Finish
Finishing Compound S. P.
"Brosco" Scroop Oil

When used in proper combination, the above "BROSCO" FINISHES will give any desired degree of Low Lustre, Water and Spot Proofing, Softness and Elasticity—and only "one bath" is necessary.

"BROSCO" FINISHES are "fixed" on the Fibre and thus will withstand repeated washings.

May we send you further details,—or have one of our practical men call?

NRA MEMBER U.S. WE DO OUR PART

Brosco Products

SCHOLLER BROS. INC.

MFGRS. of TEXTILE SOAPS, SOFTENERS, SULPHONATED OILS & SPECIALTIES
AMBER and WESTMORELAND STS., PHILADELPHIA, PA.
and in ST. CATHARINES, ONTARIO, CANADA

TXT

neutralizes undesirable odors of finishing oils

Give your product that selling advantage. Write for details.

T X T is made only by

van Ameringen -Haebler, Inc.

315 Fourth Avenue, NEW YORK

MINEROL

6 MILLION SPINDLES ARE EQUIPPED FOR

Now there's MORE to do . . . and LESS time to do it!

- **COTTON** fibre conditioning . . . assisting normal moisture retention . . . unchanging in climatic variations.
- The **BRETON MINEROL PROCESS** softens natural fibre coatings . . . makes them pliant . . . lessens kinkiness.
- **MINEROL** treatment produces better runs in Carding, Drawing and Spinning operations. It brings favorable reactions in Dyeing, Bleaching and Mercerizing.

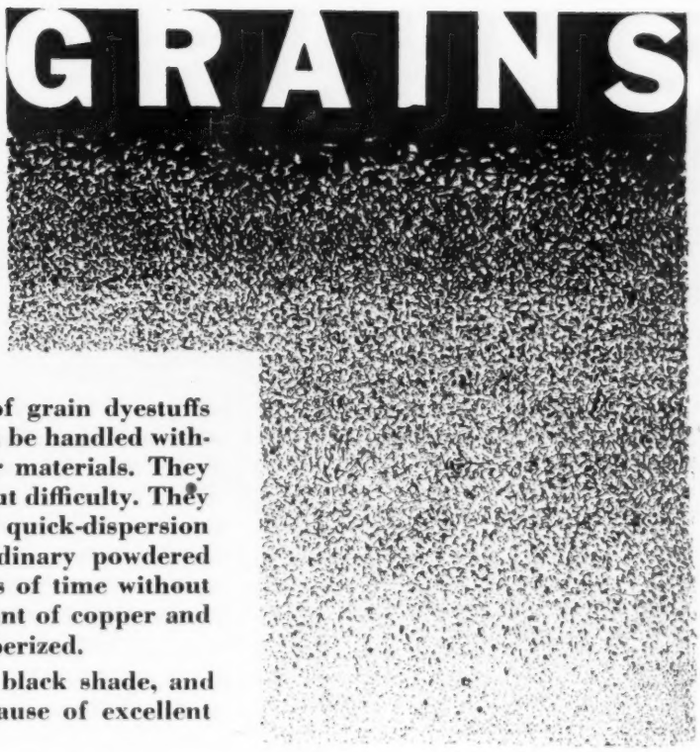
RAW COTTON LUBRICATION *by the* BRETON MINEROL PROCESS PATENTED

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK

INTRODUCING SULFOGENE CARBON 5GN & RNN GRAINS



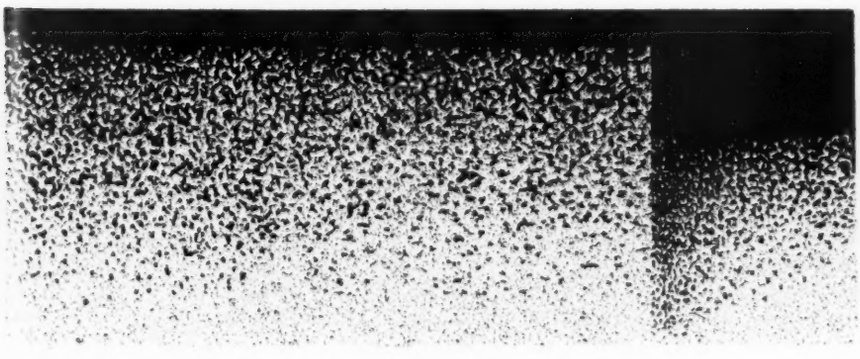
These new additions to our line of grain dyestuffs are, of course, non-dusting and can be handled without danger of flying particles contaminating other materials. They are instantly dispersable in water and wet out without difficulty. They are very easily reduced because of their natural quick-dispersion properties. They are much more stable than ordinary powdered Sulphur Blacks and can be stored for long periods of time without deterioration. They contain only a minimum amount of copper and are suitable for dyeing material which is to be rubberized.

SULFOGENE CARBON 5GN GRAINS gives a greenish black shade, and is economical to use on mercerized materials because of excellent affinity for the fibers.

SULFOGENE CARBON RNN GRAINS gives a reddish black shade. It possesses excellent affinity for the fibers and exhausts well. It can be applied to cotton in all stages of manufacture, and with economy.

Both 5GN and RNN Grains can be used in all current types of circulating machines.

We suggest the use of these improved products in your dye operations. Both are highly concentrated and cost no more than the powdered brands now on the market.



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REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO.
INCORPORATED

Organic Chemicals Department

Dyestuffs Division, Wilmington, Delaware

SALES OFFICES: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries Limited, Dyestuffs Division, Beaver Hall Building, Montreal, Quebec and 372 Bay Street, Toronto, Ontario.

Refinishing

This critical step in your processing governs the final appearance of your goods. It is of major importance that colors shall not be dulled and that whites shall not be discolored.

• DEGOMMA 20F •

dissolves completely in water to a clear solution which obviously cannot alter the most delicate shade or discolor the purest whites. It may even be left in the goods without affecting their shade. DEGOMMA 20F is easily the best agent for use in refinishing.

Degomma 20F is a clean, white powder which dissolves to a clear, stainless solution. It will not spoil or lose strength and cannot hurt the fibre.

FOR ALL DESIZING PURPOSES—USE DEGOMMA 20F.

Röhm & Haas Co., Inc.

222 West Washington Square, Philadelphia, Pa.

STAR BRAND SILICATE OF SODA★

BLEACHER USED STAR BRAND BATH ON WOOL SIX MONTHS

SIX MONTHS is a long period when you mean a bleach bath for wool.

And the secret of its life is Star Brand silicate of soda. Here is a clarified, exceptionally pure silicate, which "stands the gaff."

Our point is not that all baths will last six months, but that they stand up longer with Star Brand. Try it.

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General Offices and Laboratory: 125 S. Third St., Philadelphia, Pa.
Chicago Sales Office: 205 W. Wacker Drive. Stocks in 66 cities.
Sold in Canada by NATIONAL SILICATES LTD., Brantford, Ontario

★ IN THE KIER, USE METSO SODIUM METASILICATE

2 ESSENTIALS

for highest quality bleached goods at lowest unit cost—

BECCO Concentrated HYDROGEN PEROXIDE

Up-to-date mills all over the United States have discovered these two **modern** essentials to a superior and economical bleach. **Becco** Concentrated Hydrogen Peroxide **plus Becco** Technical Service means a careful, accurate application of peroxide to **your** bleaching requirements. The result, to which so many mills bear testimony: the highest quality bleached goods at lowest unit cost. **Becco** can be adapted to the bleaching of any fabric—raw stock, yarns, knit goods, hosiery, piece goods, specimens, etc. Write for full details.

BECCO TECHNICAL SERVICE

BUFFALO ELECTRO-CHEMICAL CO.

BUFFALO, NEW YORK

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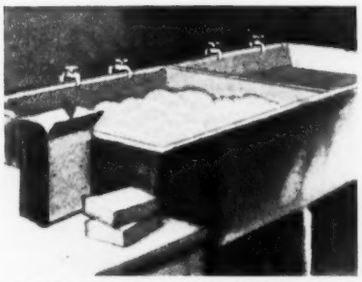
DIAMOND
58%
SODA ASH

A consistent specification year after year in the manufacture of...

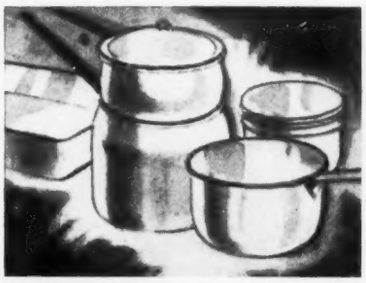
GLASS because its dense, dustless granular composition combines a purity of over 99.8% Sodium Carbonate and a Sodium Oxide content always equivalent to over 58%.

PAPER because a soda ash of the very highest purity is necessary in replenishing spent liquors as well as for de-inking operations in reworking waste magazine or book stock.

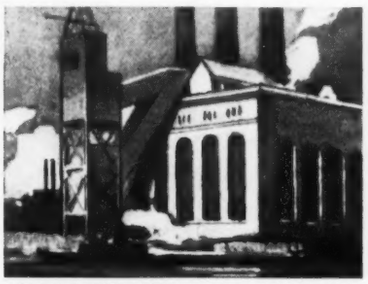
TEXTILES because of its splendid cleansing and water softening qualities and its uniform alkalinity; all of which contribute to the final quality and finish of the material.



DETERGENTS because of its valuable properties in emulsifying or saponifying oils, fats and the removal of dirt or stains. It is the principal alkali agent in soap powders.



ENAMEL WARE because Diamond Soda Ash is not only used as a most effective cleaning agent for its vitreous coat but also as a dependable element in enamel manufacture.



WATER CONDITIONING because it is recognized as the basis for many water softening compounds used in the laundry, household as well as industrial plants.

Diamond 58% Soda Ash is acknowledged as a standard of quality throughout industry. Whatever your process—whatever your requirements—you can depend on Diamond 58% Soda Ash to deliver satisfactory results time after time with unvarying uniformity. Let Diamond serve you during 1934.

DIAMOND ALKALI COMPANY, Pittsburgh and Everywhere

ALKALI

The PLUS Value in Arnold-Hoffman Products

ARNOLD-HOFFMAN PRODUCTS

Sizing Gums & Compounds Soluble Gums • Softeners Soluble Oils • Tallow • Waxes • Soaps • Flour Dextrines • Starches • Pigment Colors and Lakes • Ammonia • Acids • Blue Vitriol Borax • Bichromate Soda Bichromate of Potash

BELLE BRAND

Liquid Chlorine • Chloride of lime • Caustic Soda (solid and flaked)

With the entire industry on an equal basis as regards hours and wages, with price cutting among suppliers practically eliminated, textile processors must look elsewhere for profits. Among other things extra or PLUS value in commodities and services purchased becomes increasingly important.

What is the PLUS value in A-H products?

These products are unsurpassed in quality and are maintained at this standard by unceasing vigilance, but this is not extra value. It's no more than what you expect from a company which has so successfully served the industry for more than 100 years.

The PLUS value in A-H products is the free consultation service that goes with them. This service helps processors to determine what A-H chemicals are needed for a particular problem and how best to use them. It is made possible by the facilities of a complete and up-to-date laboratory, a staff of specially trained chemists, and a rich background of experience gained in 118 years of contact with all phases of textile processing.

Since you can get A-H products PLUS this valuable consultation service at no extra cost, why not use them.

Arnold, Hoffman & Co., Inc.

Established 1815. Plant at Dighton, Mass.

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Brilliant white crystals of uniform purity and quality. Free flowing because of superior mechanical condition. Four grades: chip, flake, fine or powdered.

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AMMONIUM PHOSPATE

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TO the immense satisfaction of mills and dyehouses, HYDROSOL has been used as a scour on all fibers and mixtures. Removes mineral oil and other foreign matter and keeps bath in perfect solution. Works with or without soap. Prevents formation of lime soaps.... HYDROSOL is exceptionally valuable as a penetrant. It permits complete penetration and insures clear, level dyeings.

HYDROSOL is practical, economical and thorough.

Our new folder, "Hydrosol, the Scour and Penetrant," on request

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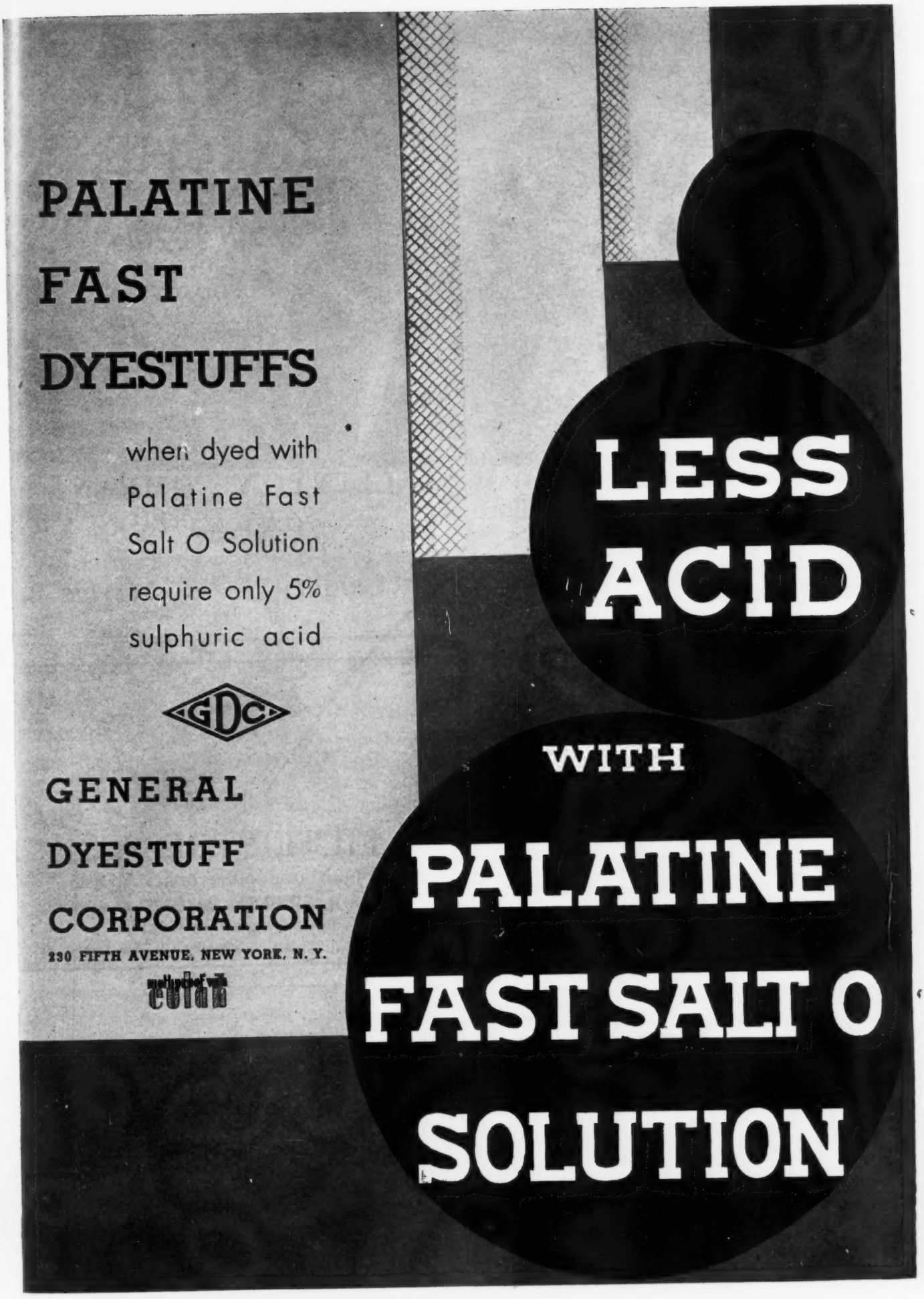
WM. H. BERTOLET & SONS
2606 E. Tioga St., Philadelphia

See Textile Catalogs, page 186

Laurel has been solving Textile Treating Problems since 1909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FAST
DYESTUFFS
when dyed with
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We maintain in our Technical Service Department a staff of experts in Alkali. These men have studied the problems of the various industries using Alkali and know their particular and individual needs. If you have a problem affected by soda ash, caustic soda, or any other alkali, that is causing you anxiety, we will be pleased to have you correspond with SOLVAY SALES CORPORATION, 61 Broadway, New York City, or with the nearest branch office or distributor. If necessary, they will be glad to send a man who has specialized on your particular problem, to assist you in working out a satisfactory solution.

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CLINTON STARCHES

For All Textile Purposes

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Manufactured by

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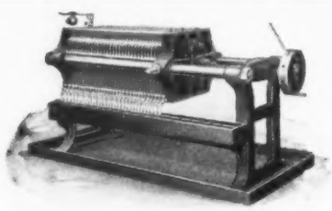
Quality « » Service



FILTER PRESSES

For Manufacture of RAYON

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Batavia, Illinois

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Always In Stock For Immediate Delivery

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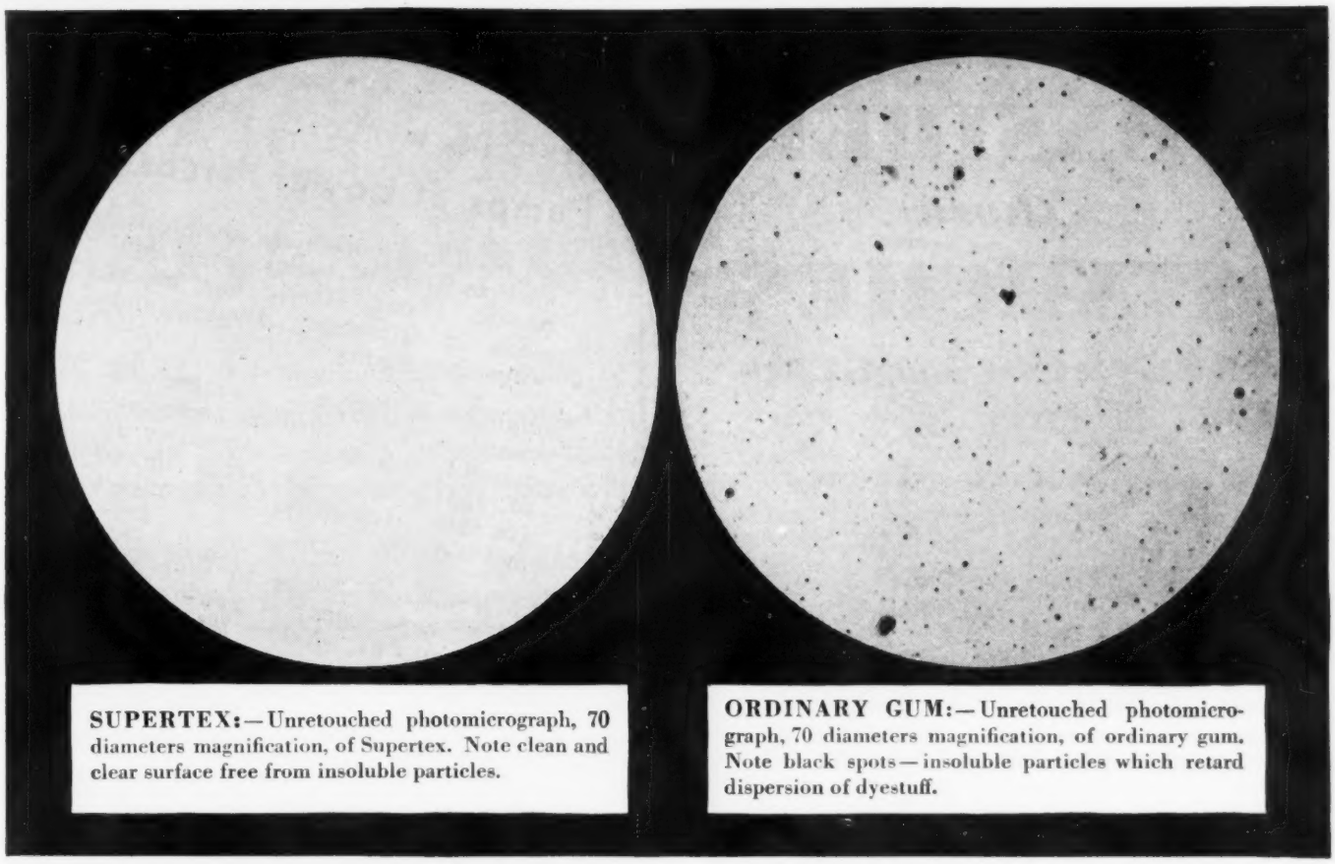

SUPERTEX:—Unretouched photomicrograph, 70 diameters magnification, of Supertex. Note clean and clear surface free from insoluble particles.

ORDINARY GUM:—Unretouched photomicrograph, 70 diameters magnification, of ordinary gum. Note black spots—insoluble particles which retard dispersion of dyestuff.

Here's why Supertex excels!

● The microscope tells the story—*Supertex and ordinary printing gums are manufactured from the same raw materials—but notice the difference. Our patented special process makes Supertex a *thoroughbred* printing gum—so purified and clarified that it suspends dyestuffs and hydrosulphites in a much more finely divided state.

Many printers are fooled by printing gums because certain important characteristics are not visible to the naked eye. They are readily seen under the microscope, particularly after adding a small amount of tint to intensify the denser particles. Supertex is absolutely clear, showing no solid particles, while the ordinary gum contains numerous insoluble materials which, in printing, filter out on the surface of the cloth as illustrated above.

All the impurities of the raw materials which are impossible to convert have been removed from Supertex, resulting in an evenly suspended solution. This feature assures better dispersion of the dyestuff or hydrosulphite, better penetration, and better dyeing of the fibres. These two photographs prove that doctor streaks and scratches on rollers are impossible with Supertex.

Use Supertex for rich, true colors, clear and well defined printing, and complete penetration.

• • •

FREE—Write today for a free sample of Supertex for your own testing with any ordinary printing gum.

*TRADE NAME REGISTERED AND PROCESS PATENTED

JACQUES WOLF & CO.

Manufacturing Chemists and Importers

Passaic, N. J.

Warehouses: Providence, R. I. • Philadelphia, Pa. • Utica, N. Y. • Chicago, Ill. • Greenville, S. C. • Chattanooga, Tenn.

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STARCHES
DEXTRINS *and* GUMS

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DEXTRINS

White — Dark Canary
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THESE STARCHES, dextrins and gums are manufactured by carefully controlled and standardized methods. Purity and uniformity are guaranteed. Economy and efficiency are attested by the constantly increasing number of users who are getting satisfactory results.

These are selected products available for the purposes and conditions of exacting textile manufacturers.

IMPORTANT

Our research department will be glad to furnish additional information regarding the types and uses of these and other products as applied to the special needs of the Textile Industry. Write to

CORN PRODUCTS REFINING CO.
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Five New Acid Pumps at Lower Prices!

For handling corrosive chemicals, such as Dyes, Caustics, weak Sulphuric, Nitric, Acetic and other acids in Bleaching, Dyeing and Finishing Plants.

Simplified in design . . . higher efficiencies . . . various corrosion-resisting alloys . . . capacities up to 250 g.p.m. and heads up to 120 ft . . . for either belt or direct motor drive.

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Everything for Textile Printers
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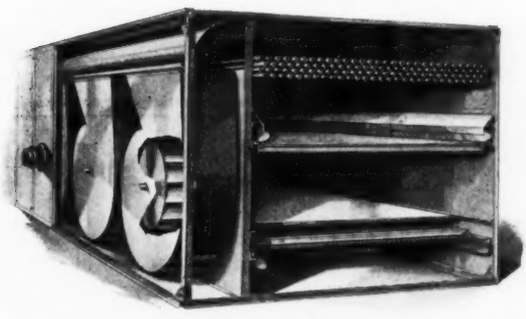
PROCTOR the SUPER **STOCK DRYER**

In 1923, it revolutionized the drying of wool stock, cotton, linters, rayon waste, silk waste, etc. . . . setting a new standard of design, performance, economy of operation.

Since then . . . for 10 years . . . it has outshone and outsold all other dryers for the purpose. More important, it has itself steadily and greatly improved.

In 1933, with direct motor drives, variable speed control, hinged-girt conveyors with traveling side guards, increased insulation of panels and framework, leak-free steam heaters, intensified air-circulation, all-metal feed, and improved details throughout, the Proctor Dryer is higher than ever above comparison. It best meets today's needs of maximum hourly output, minimum cost of operation, dependability that means uninterrupted working schedules.

And remember, Proctor high capacity ratings are based on performance facts repeatedly demonstrated, and are guaranteed in full measure for your plant. Write for acquaintance facts.



PROCTOR & SCHWARTZ, INC
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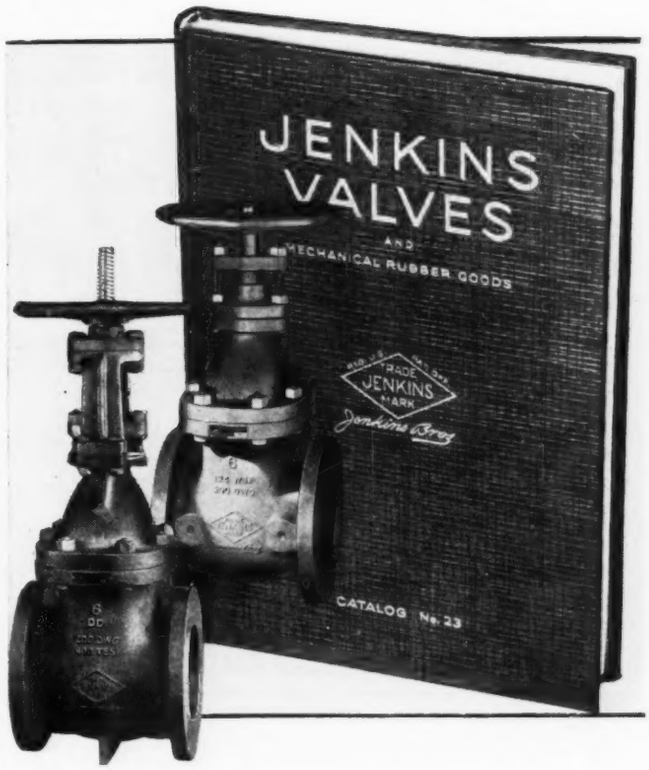
An Iron Body Gate for every need



— in the new Jenkins Catalog

IN THE NEW 264 page Jenkins Catalog you'll find Iron Body Gates in a wide range of types, sizes and patterns. Every need is covered. And unusually complete details are given to help you select the right Iron Body Gate for a particular job.

Any Gate you may order from this book is certain to work perfectly when you get it...and to stay in service with the minimum of maintenance. For every Jenkins Gate is made as good as this famous old organization of Valve Specialists can make it. And before shipment, every valve must prove its ability to work properly and stand the service for which it was built.

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BRONZE IRON STEEL
VALVES
Since 1864

JENKINS VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"

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OIL TANKS
AIR RECEIVERS
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ESTABLISHED 1854

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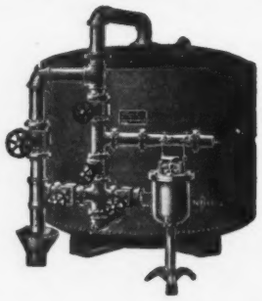
FABRICATORS OF STEEL AND ALLOY STEEL PLATE

Roberts Filters

ROBERTS FILTERS

Provide Pure Clean Water for All Industrial Purposes



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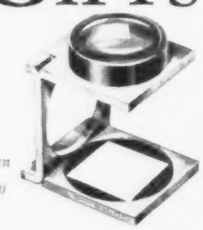
will solve your Christmas Gift Problem



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Vulcanized Latex

U. S. Patent Nos. 1,443,149 and 1,682,857

Vultex is helping to produce new finishes, new purpose fabrics, new markets and new profits for many mills. We invite you to take advantage of our technical service.

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Customs house figures prove that we are America's largest SAGO importers. Stocks for immediate shipment at New York, Chicago, San Francisco and other points. ***Send us your inquiries.***

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TEXTILE PROCESS MATERIALS

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Sizings-Gums-Starch Products-Finishes
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MANUFACTURED UNDER PRECISE CONTROL

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BASED ON RESEARCH

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Sulfonated Oils	Dye Assistants
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Anti-Mildew Agents	Finishing Oils
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Our specialized research facilities are available also for cooperation in the solution of special processing problems.

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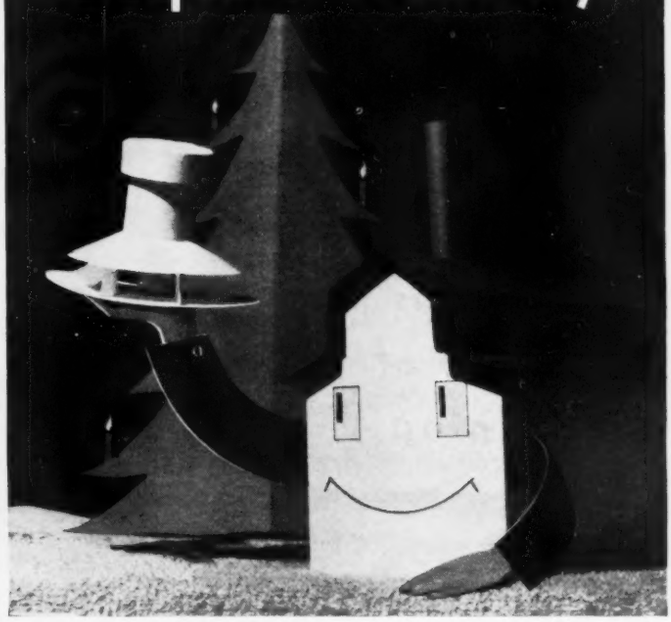
Textile Processing Specialists
1440 Broadway - - - New York, N. Y.

Adequate Humidity?



Just what I needed!

Many mills *need* more humidification . . . for during the past few years, motorized equipment and new high speed machines have been installed —yet the air conditioning systems of these mills have remained unchanged.

The result, is increased heat output, lowered humidity, production difficulties and higher costs.

If you are planning to add new equipment in the coming year, let a Parks-Cramer engineer in your territory make a complete check of your present humidifying system. His recommendations are based on a thorough knowledge of modern mill requirements and all air conditioning problems.

☆ ☆ ☆

Parks-Cramer Company is the only manufacturer producing the six types of air conditioning apparatus which have been generally considered practical: Turbo Humidifier; Central Station Equipment; Spray Humidifier; High Duty Humidifier; Centrifugal Humidifier; Unit Air Conditioner. Descriptive bulletins sent on request.

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"Any man in the industry who doesn't read this paper is out of the running"

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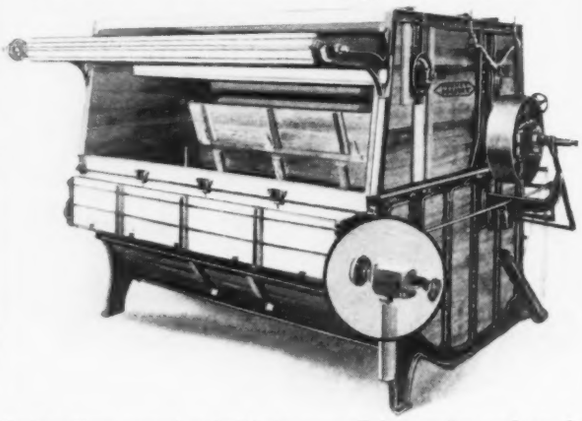

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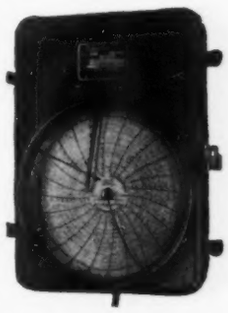

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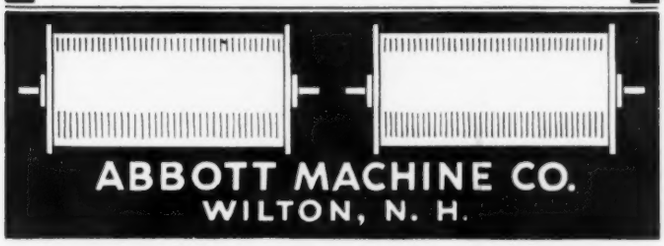

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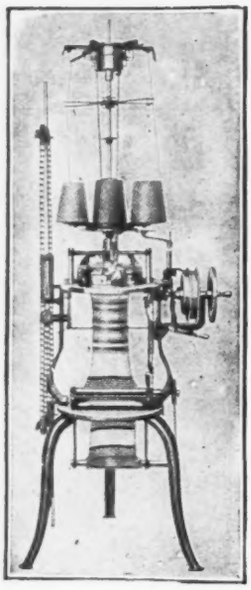

At the left. Improved Automatic 3-Colored Plain Stripes. Made in sizes from 7⅞ in. to 20¾ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

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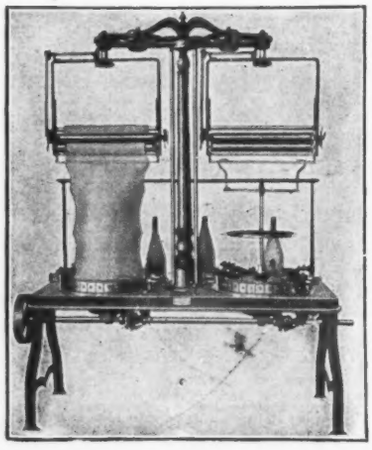

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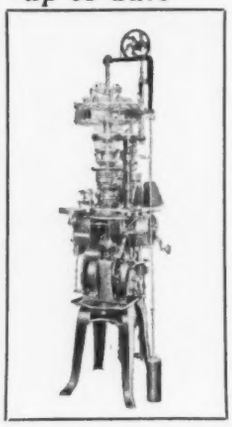

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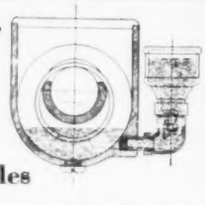

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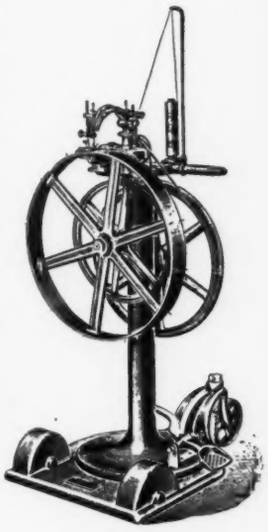

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No. 3

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STOP MOTIONS

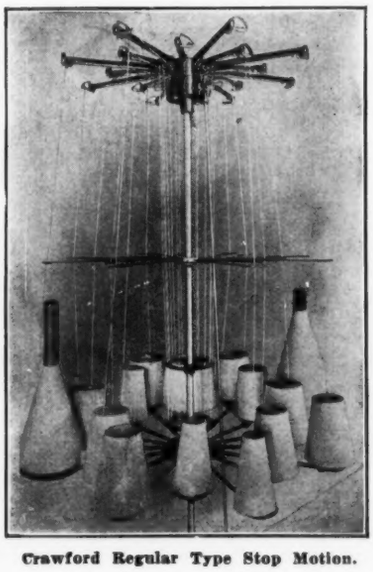

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Fig. 1356 "Hallowell" Steel Chair

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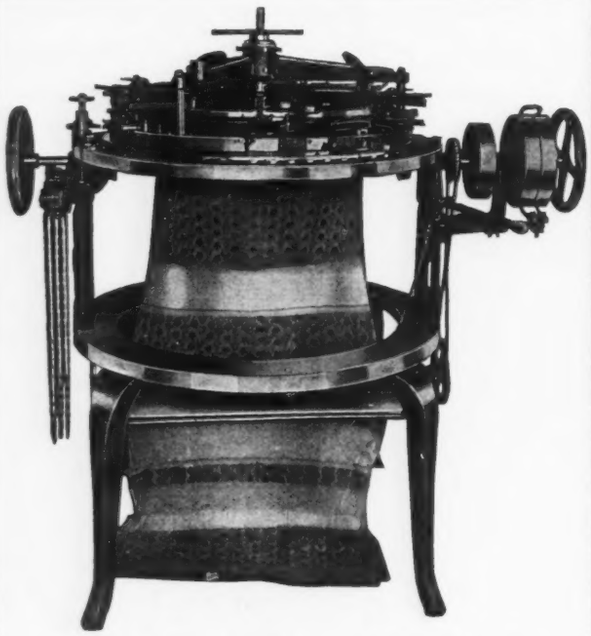

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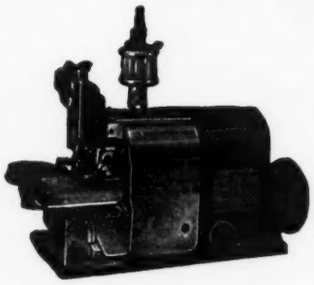

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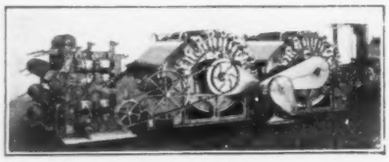

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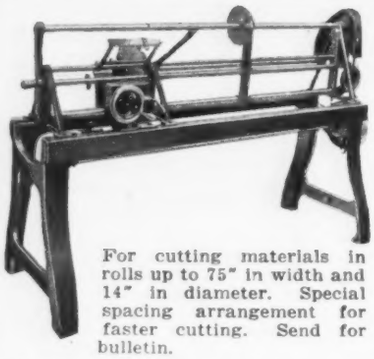

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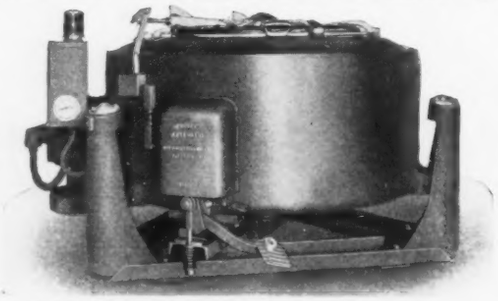

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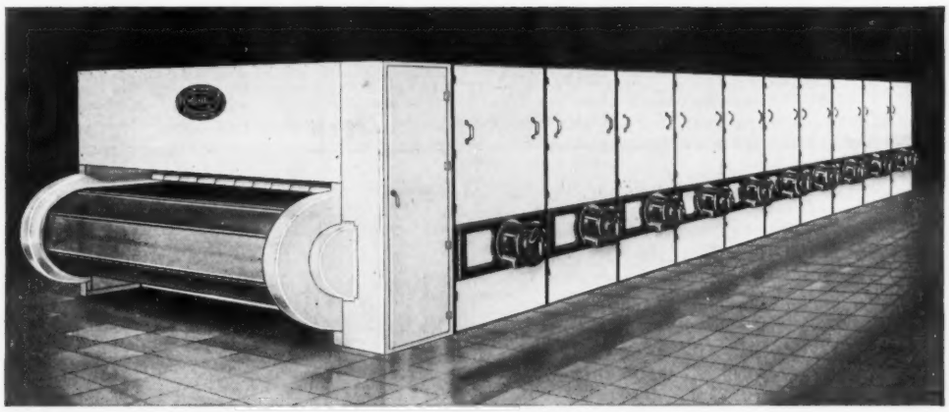

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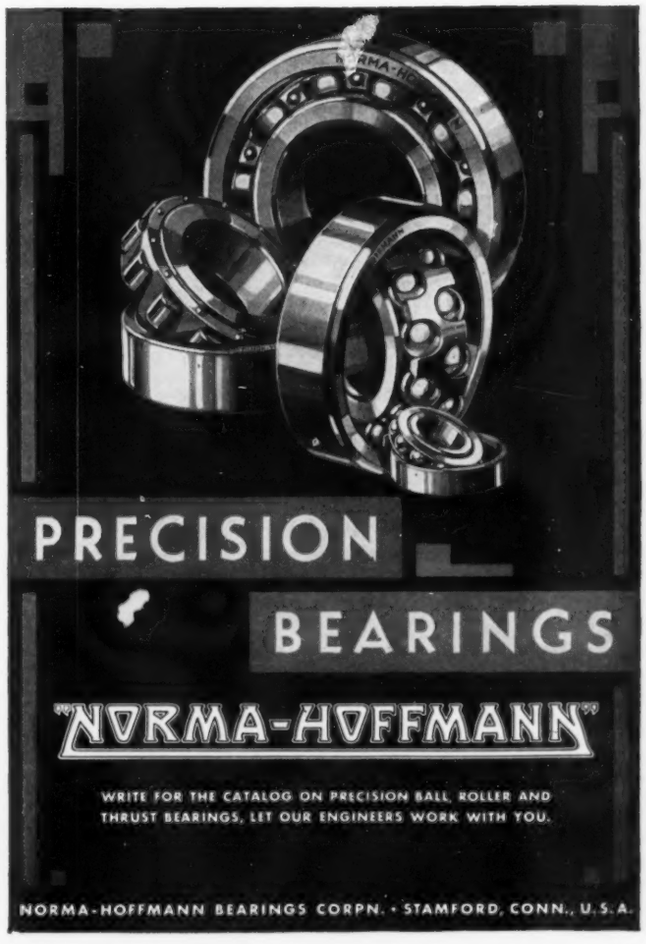
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SEARCHLIGHT SECTION

MACHINERY, MILL SUPPLIES, YARNS, ETC., WANTED AND FOR SALE
BUSINESS OPPORTUNITIES, MILL PROPERTIES, POSITIONS AND MEN WANTED

UNDISPLAYED—RATE PER WORD:
Positions Wanted, 5 cents a word, minimum $1.00 an insertion, payable in advance. *(See ¶ on Box Numbers.)*
Positions Vacant and all other classifications, excepting Equipment, 10 cents a word, minimum charge $2.00.
Proposals, 40 cents a line an insertion.

INFORMATION:
Box Numbers in care of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.
Discount of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:
1 inch $5.00
2 to 3 inches ..... $4.75 an inch
4 to 7 inches ..... 4.50 an inch
Other spaces and contract rates on request.
An inch is measured vertically on one column, 3 columns—30 inches—to a page.

COPY FOR NEW ADVERTISEMENTS ACCEPTED UNTIL THE 7TH OF THE MONTH FOR THE ISSUE OUT THE 18TH. T.W.

POSITIONS VACANT

EXECUTIVE. Wonderful opportunity for man with exceptional ability, experienced in hosiery manufacturing preferred, not essential. Must be brainy and analytical. Salary no object to right party. P-157, Textile World, 330 West 42d St., New York City.

WANTED: Dyer, familiar with rayon, wool and cotton union piece dye and wool stock dyeing. P-154, Textile World, 330 West 42d St., New York City.

POSITIONS WANTED

COMPETENT silk throwster experienced on silk and rayon crepe, hosiery and combination yarns. First class references, moderate salary expected. Can teach help. Will go anywhere. PW-148, Textile World, 330 West 42d St., New York City.

EXPERIENCED designer or overseer of weaving. Twelve years' practical experience on cotton blankets, ginghams, chambrays and shirtings. Know cost accounting. PW-123, Textile World, 330 West 42d St., New York City.

FOREMAN with long years' experience on Crompton and Knowles box looms with dobby or Gem-head motion, wishes similar position with reliable concern. Sober and industrious. Willing to work, capable of handling help. Good references. Go anywhere. PW-129, Textile World, 330 West 42d St., New York City.

FULL-FASHIONED fixer or foreman experienced finisher, loopers, seamers. Financial interest could be arranged. PW-115, Textile World, 330 West 42d St., New York City.

POSITION WANTED

Who wants exceedingly active Superintendent with wide experience on woolen and worsted Fabrics? Can produce efficiently and economically. A practical designer and finisher. Keen on details of each department. A reliable hard worker.

PW-149, Textile World
330 West 42nd St., New York City

EXECUTIVE

Young man with ten years' experience in mill as designer and overseer, also several years' practical experience in accounting, would like position as Agent or Treasurer of small corporation. Excellent references.

PW-121, Textile World
330 West 42d St., New York City

Quick, Time-Saving, Dependable, Confidential Employment Service

'Phone, wire or write us for textile mill executives, managers, superintendents, stylers, salesmen, overseers, designers, office men, master mechanics, second hands, fixers, etc., etc.

Charles P. Raymond Service, Inc.
38th Year
294 Washington Street, Boston, Mass.
Phone Liberty 6547

POSITIONS WANTED

OVERSEER of dyeing on acid, chrome, union piece dyes. Raw stock and worsted yarns, and knitted wear. 36 years old. PW-120, Textile World, 330 West 42d St., New York City.

RASCHEL foreman or superintendent with twelve years' experience in Germany and the United States; age 34. Specialist in elastic fabrics for corsets and brassieres. Anywhere. Good references. PW-153, Textile World, 330 West 42d St., New York City.

SILK THROWSTER—Seventeen years' experience, up to date on silk crepe, rayon crepe and hosiery throwing. Will guarantee immediate results, regardless of conditions. Practical knowledge on winding, 5-B, Twisters, Redrawing, Tubing, Reeling, Coning and Copping machines. Understand nature of raw silk, which is most necessary to get uniform soaking and good thrown yarn. Married. Age 34. PW-150, Textile World, 520 No. Michigan Ave., Chicago, Ill.

SUPERINTENDENT wishes connection with high grade underwear manufacturing concern. Thorough mechanic on all sewing machinery. 30 years' experience; 49 years of age. PW-152, Textile World, 330 West 42d St., New York City.

SUPERINTENDENT or assistant. Several years' experience management of mill manufacturing blankets, spreads, fine cottons, rayons. Know cost accounting. Location secondary. PW-124, Textile World, 330 West 42d St., New York City.

TEXTILE TECHNICIAN, 15 years' practical silk mill experience, throwing, warping, weaving, raw silk grading, testing fabrics and yarns; research, dissecting and analysis. Graduate Philadelphia Textile School. Seeks connection with mill. Anything in textile or allied line. PW-144, Textile World, 330 West 42d St., New York City.

AGGRESSIVE, age 32, 14 years' sales experience, rayons, cottons, mixed fabrics, thoroughly familiar with cutting-up, jobbing trades and sources of supply. Location Metropolitan New York. Excellent references. PW-158, Textile World, 330 West 42d St., New York City.

REPRESENTATIVE AVAILABLE

Merino Yarn Account Wanted
Reputable salesman located in Los Angeles, with 12 years' connection with the knitting trade on the Pacific Coast, desires to represent a first class merino yarn spinner. RA-151, Textile World, 880 Mission St., San Francisco, Calif.

SALESMEN WANTED

SALESMEN, experienced textiles, high commission, drawing account if qualified. J. J. Berliner & Staff, 1123 Broadway, New York, N. Y.

WANTED

ANYTHING within reason that is wanted in the industry served by Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

SALESMAN WANTED

Through transfer, the New York and Northern Pennsylvania territory now open for a high type salesman experienced in the sale and application of silk and rayon-crepe oils and acetate-rayon warp sizes. Drawing and commission arrangement offered to a producer of proven ability accustomed to good earnings. Telephone applications will not be considered. Write full history in first letter.

COLLOIDS, INC., 16 Delancy St., Newark, N. J.

DO YOU NEED NEW ENGLAND REPRESENTATION?

Our organization is now set up to add a machinery or mill supply line.

We have a wide acquaintance with mill men throughout New England through which you should profit.

RA-159, Textile World
330 West 42d St., New York City.

REPRESENTATIVE WANTED

For the New England Territory to sell a basic Card Room supply used in Woolen and Worsted Mills. Prefer an agent or commission man who is acquainted with the trade and who can carry this as an additional account. Established line for over 40 years.

RW-156, Textile World
330 West 42d St., New York City

TEXTILE MANUFACTURERS

interested in effecting substantial economies in their plants will find it to their advantage to communicate with us. Full particulars without obligation—address

J. J. BERLINER & STAFF
1123 Broadway, New York, N. Y.

Selling Agent or Distributor with a following

in the Drapery and Upholstery Field wishes to contact a mill capable of producing such fabrics with present equipment. It is not essential that such mill be at present engaged in making such fabrics, provided its looms can be utilized for that purpose.

BO-147, Textile World
330 West 42d St., New York City

FOR SALE

Carded Colored Knitting Twist

Single 12's and 14's Cotton. Substantial quantity of all fall solid colors and mock twists. Will sell at price below market.

FS-110, Textile World
330 West 42d St., New York City

Dismantling, Crating and Shipping

All kinds of Textile Machinery Expertly Handled

Domestic and Foreign Shipments

List Building
Fall River, Mass.

Joseph M. Lassonde

P. O. Box 256
Phones 2439 and 806

SEASON'S GREETINGS

To those whom we have served . . . sincere thanks. We shall try to merit your future good will.

To others . . . may we prove to your satisfaction the reliability of our service.

TO ALL good wishes for the New Year.

NRA MEMBER U.S. WE DO OUR PART

COMER-KIMMEL MACHINERY CO.

ATLANTA, GA.
308 Ivy Street
Walnut 7063

PROVIDENCE, R. I.
Industrial Trust Bldg.
Gaspee 9477

AKMCo

Used Machines at Buyer's Prices

- **RIBBERS FOR HOSIERY TOPS** Nye and Tredick, 2¾ to 4¼-in. diameter, 18 and 24 gauge, with 2 feeds.
- **BRUSHING MACHINES** Ainslie and McCreary make, 36-in. and 54-in. rollers. Also teaseling machines.
- **LOOPERS** Record and Southern Textile Loopers, all gauges.
- **PRESSING MACHINES** Hoffman and American Laundry presses, all sizes.
- **SMALL TUBING MACHINES** For making narrow circular braid from ⅛-in. to 1-in. diameter.
- **GOLF HOSIERY MACHINES** Scott & Williams 3¾-in. diameter, 92 needle, 18 gauge, 18 step spiral, 3 color striper.

Ainslie Knitting Machine Co., Inc.
740-750 Grand Street
Brooklyn, N. Y.

Run Them Alongside New Ones!

CONSOLIDATED Re-Built Sewing Machines

Stand the Test

CONSOLIDATED SEWING MACHINE & SUPPLY CO.
1115 Broadway, New York City
Cable Address: CONSOMACH N. Y. C.

Watch—
the *Searchlight Section*
for
Equipment Opportunities

8—Union **Special Seamers**, style 41200A.
10—Wright Steady Dial, 30 Pt. **Loopers.**
40—Scott & Williams **Knitters**, 3¼ in. 160 N.
50—Banner Split Foot **Knitters**, 3½ in. 240 N.
1—Hoffman **Underwear Press**, 32 in. x 72 in.
25—**Merrow Machines**, Style 6-S, 60UD.
JAMES SLAYBAUGH
5416 Lena St., Germantown, Philadelphia, Pa.

WANTED

WANTED
Cloth Doubling and Winding Machine
Parks Woolson Springfield Type
Beuret & Co., Inc., 2 Park Ave., N. Y. C.

BALING PRESSES WANTED
Send Full Particulars
NEW YORK MACHINERY CO.
27 West 24th Street, New York

WE OWN AND HAVE FOR SALE

200—40" **DRAPER MODEL E. LOOMS.**
2—No. 90 **UNIVERSAL WINDERS.**
24—**SACO-LOWELL 1920 40" CARDS,** 12" coilers. Complete with Saco-Lowell Stripping Device.
2—**THREAD DRESSERS,** single brush, 98 spindles each.
1—**PARKS & WOOLSON MODEL A. 66½" DOUBLE SHEAR.**

A. F. FYANS
7 No. Main St., Fall River, Mass.

WANTED
GENERATOR
200 to 300 kva., 3 ph., 60 cy., 550 v.
W-146, Textile World
330 W. 42nd Street, New York City

WANTED
One Parks & Woolson Machine Model AR with Transferotor
W-160, Textile World
330 West 42d Street, New York City

FOR SALE
BROWNELL TWISTER
96 Spindle, Flier, 6-in. gauge, 6-in. traverse, piped with moistening apparatus and monel tank, with pump, cotton band drive, Type M, Serial No. 13258, bought Sept., 1929, used only experimentally. Equipped with (2) 5 hp., G.E., 440 v., 3 ph., 1200 r.p.m. motors and C.H. starters. No creel. Also 5000 wood spools 4¼-in. head by 6-in. between heads.
BEMIS BRO. BAG CO., St. Louis

"Opportunity" Advertising:
Think *"Searchlight"* First!

WANTED
KNITTING MACHINES
All kinds of circular. State price, size and make.
EAGLE BEEF CLOTH COMPANY
315 Christopher Avenue, Brooklyn, N. Y.

FOR SALE
Singer 46W122; Metropolitan 192B21; Union Special 1700Z; Union Special 16800Z; Willcox & Gibbs tacker; all practically new machines. Also Eastman Electric Cutter, vertical knife; Diagraph Stencil Cutting Machine; Cincinnati Time Recording Clock; Brown & Sharpe Yarn Reel and Scale. Inspection by appointment.
FS-132, Textile World
330 West 42d St., New York City

FOR SALE

Scott & Williams 14-in., 9 cut; 14-in., 10 cut; 13-in., 12 cut; 15-in., 12 cut; 17-in., 12 cut; 17-in., 11 cut; 18-in., 11 cut.

Wildman 21-in., 11 cut.

Wildman, S. & W., N. & T. Cuff mach., 4 in., 4¼ in. 4½ in. Welt attach.

Rodney Hunt Fulling Mill.

Davis & Furber 80-in. Double Acting Napper.

Gessner 90-in. Double Acting Napper.

Smith Drum Rotary Dyeing Machines, Pumps, etc., complete.

30 Spindle Foster Winder.

12, 18, 24 Payne Winders.

Banner Hosiery Machines. Jacquard. 12 Step and Diagonal.

S. & W. 3¾-in. 108 to 240 Needles.

Leighton, 5 and 6 cut, racking machines. All sizes.

INQUIRIES SOLICITED FOR ANY MACHINERY USED IN KNITTING OR TEXTILE MILLS

THOMAS E. BATEY

Kendal Green, Mass.

Universal No. 50 Silk Coners.

Universal No. 90 Coppers.

Silk Winders, all types.

Bottle Bobbin Winders, Allen, Lever, Altenus, Payne.

Motors, 2 and 3 ph.

Wildman Cylinders and Dials, 8 cut.

4 — 88 spd. Atwood Spinners.

2 — 100 spd. Scranton Spinners

1 — Mertz Humidifying System

Unit-Banner Knitters and Ribbers.

4 — Union Special 39100AA.

1 — Grand Rapids Length Cutter.

Scott & Williams Knitting Machines — 10-20 in

3 — Wildman Knitters, 6 in., 200 n. 2 feed

1 — Wildman Knitter, 12 in., 8 feed, plain. 8 cut.

1 — 60 UD Merrow.

2 — Wildman 13-in., 10 cut auto.

2 — Wildman 17 in., 10 cut plain 12 feed.

11 — Atwood 5B, 104 spdls.

AMBLER TEXTILE MACHINERY CO.

Bodine and York Sts. Philadelphia, Pa.

28—Universal No. 50 Coners or Tubers.

32—Universal No. 50 Coners Skein to Cone (Serial C).

1—80 Sp. 5B Spinner.

2—1K-4 Fly Reels.

2—100 Spindle Foster Cone Winders.

1—80 Spindle Foster Cone Winder.

1—40 Spindle Foster Cone Winder.

6—48 Spindle Easton & Burnham Skein Spoolers.

1—72 Spindle Atwood Doubler.

1—Universal No. 90 Cop Winder.

5—24 Spindle Oswald Lever Bottle Bobbin Winders.

C. I. GINSBERG

131 West 21st Street, New York City

If You Need

Flat Steel Heddles
Drop Wires
Harness Frames
Weaving Supplies

Ask

Pawtucket Mill Supply Co.

Pawtucket, R. I.

Extractor Bargains

Rebuilt and tested in our own shops at Newark, N. J.

1—60-in. Unused Tolhurst, motor driven.
2—30-in. American Laundry, motor driven.
2—48-in. Tolhurst, motor driven.
4—40-in. Tolhurst, belt driven.
3—26-in. American, Tolhurst; belt driven.

Dyeing Equipment

2—Haveg Dye Tubs.
3—Tenter Frames.
1—Proctor Loop Dryer.
1—Giles Rotary Dyeing Mach.
1—Four color Textile Printing Machine.
5—Sets of Dry Cans.
4—10-ft. Dye Becks.

Note: We buy your Idle Equipment. Send us a list.

CONSOLIDATED PRODUCTS CO., Inc.

Barclay 7-0600 13-16 PARK ROW, NEW YORK, N. Y.

Tompkins Tables and Equipment

DEALERS and MANUFACTURERS

1—54-in. Curtis & Marble Shearing Machine
2—45-in. Curtis & Marble Shearing Machines
2—40-in. Curtis & Marble Shearing Machines
1—36-in. Curtis & Marble Measuring Machine

JOSEPH PERNICK CO., INC.

TEXTILE MACHINERY

5419 FLUSHING AVENUE, MASPETH, L. I., N. Y. Stagg 2-6816

Fullest Assortment of Equipment in the Country

HARRY STEPHENSON

IMPORTER, DEALER AND MANUFACTURER

TEXTILE MACHINERY AND APPLIANCES

NEW AND USED

146 SUMMER ST. cor. High St., BOSTON, MASS.

MICHAEL KERWIN

210 E. COURTLAND ST., PHILA., PA.

GOOD USED TEXTILE MACHINERY AND SUPPLIES

SPECIALIZING IN WORSTED MACHINERY

JOHN J. McCLOSKEY, Inc.

MANUFACTURERS AND DEALERS

TEXTILE MACHINERY OF ALL TYPES

APPRAISALS WOOLEN—WORSTED—COTTON LIQUIDATIONS

NEW AND USED

Philadelphia Office: 138 So. Front Street Factory & Warehouse: Collingswood, N. J.

FOR SALE

12—Modified "D" 40-in. **Draper Looms**, 12 Harness Dobby, Motor drive.
16—C. & K. 2x1 box 45-in. **Automatics**, 12 Harness Head, Motor Drive.
1—Parks & Woolson 42-in. Model A **Double Shear** with list saving rests.

Miscellaneous equipment for above. All machinery in perfect operating condition.

FS-155, Textile World
330 West 42d St., New York City

FOR SALE

Barber-Colman Model K Warp Tying Machine. New, used two months.

FS-145, Textile World,
330 W. 42nd Street, New York City

! REACH the BUYERS !

of used machinery and surplus new equipment

through the

SEARCHLIGHT SECTION of *Textile World*

SELL for CASH the machinery you are replacing or that which is no longer needed in your plant.

For advertising rates and information address

Departmental Advertising Staff

Textile World

FOR SALE

Circular Knitting Machines

1—16" Brinton 10 cut 8 feed Knitter.
4—18" Brinton 11 cut 8 feed Knitters.
2—20" Brinton 10 cut 12 feed Knitters.
13—extra cylinders and dials for Brinton Knitters.
8—Scott & William Jersey Knitters—18" 10 cut.
5—Wildman 18" Knitters.
1—Stafford & Holt 24" 16 feed Knitter.
1—Stafford & Holt 17" 12 feed Knitter.
7—Brinton 4 stripe Necktie Knitters.
18—Nye & Tredick circular Knitters.
2—Tompkins tables Knitters.
2—Campbell & Clute Tables Knitters.

65—cylinders and dials.
38—cylinders.
60—Scott & William & Wildman cylinders and dials.
40—Nye & Tredick cylinders and dials.
10,000 Payne, Lindley & Altemus Bottle Bobbins.
40—Stop motions, various sizes.
A very large assortment of Feeders, wheels, locks, needles, gears, etc. for Wildman, Scott & William, Stafford & Holdt circular Knitters.
76—Bottom Springs for Wildman Knitters, complete.

Winding Machines

15—**Universal No. 50 Coning Machines.**
15—**Universal No. 50 Tubing Machines.**
12—**Foster Winding Machines.**
86—**Rayon Winding Machines,** all sizes and makes.
7—**Bahnson Humidifiers,** D.C. with motors.
5—**Payne Cotton Winders,** 48 spindles each.
1—**Brown & Sharpe Cotton Testing Machine.**
10,000 **Fibre Bobbins,** 3-in. traverse by 2¾-in. head.
6,000 **Metal and Wooden Head Bobbins,** 5-in. and 6-in. traverse.
Various Spinning and Twisting Machines.
1—**Atwood make 80-spindle Twister, double Rollers,** 12 ends.
Various other machinery for winding, spinning, etc.

Braiding Machines

Wardwell Braiders, 16 carriers.
250—16 carrier. N. E. Butt make round braiders No. 2s.
350—12 carrier. N. E. Butt make round braiders No. 2s.
250—24 carrier. N. E. Butt make round braiders No. 2s.
250—24 carrier round wire braiders. No. 2s. N. E. Butt make.
2—36 carrier No. 2. N. E. Butt wire braiders.
1—24 carrier N. E. Butt Cable Braider.
Universal Tubing and Winding Machines.
100—25 carrier N. E. Butt No. 2 flat braiders.
50—17 carrier N. E. Butt No. 2 flat braiders.
10—17 carrier N. E. Butt No. 1 flat braiders.
100—61 carrier No. 2 flat N. E. Butt braiders.
100—60 carrier No. 2 round tubular N. E. Butt braiders.
8—8 carrier round Butt braiders, No. 2s.
4—41 carrier No. 1 flat N. E. Butt braiders.
8—49 carrier No. 1 flat N. E. Butt braiders.
2—49 carrier No. 2 flat N. E. Butt braiders.
2000—Mossberg Metal Reels, 16 in. diameter 4 1ths traverse, 50c. each.
135—Textile make 48 carrier round tubular braiders, table drive.
140—29 carrier flat Textile make braiders, table drive.
100—41 carrier flat Textile make braiders, table drive.
50—65 carrier flat Textile make braiders, table drive.
400—17 carrier flat Textile make braiders, table drive.
400—33 carrier flat Textile make braiders, table drive.
300—13 carrier flat Textile make braiders, table drive.
Benches for New England Butt and Textile braiders, shafts, hangers, motors, parts, gears, weights, etc.
35—**97 carrier flat Textile make braiders,** table drive.
20—**89 carrier flat Textile make braiders,** table drive.
Bobbins, all makes, all sizes.
2—**Cellophane cutting machines.**
Guimp, spinning and twisting machines.
45—**Flat and round knitting machines,** various makes.
Various other Textile machines.
8—Chennille machines.

WE ARE OPEN TO BUY ALL TYPES OF TEXTILE MACHINERY

MERRY CHRISTMAS TO ALL

ROBERT SOLOMON & CO., INC.

Dealers in Textile Machinery

165 Greene Street, New York City

FOR SALE

Spring Needle Knitting Machinery.
Knitting Machine Burrs, all gauges.
Spring Needle Knitting Machine Parts.
Latch Needle Knitting Machines, and **Cylinders and Dials.**
Payne Winder Bottle Bobbins.
Used Textile Machinery of all kinds.

A. J. CADY
P. O. Box 522 Troy, New York

APPRAISALS **LIQUIDATIONS**

HAROLD W. HORTON
TEXTILE MACHINERY AND SUPPLIES
49 Westminster Street, Providence, R. I.
GAspee-5491

FOR SALE

6—Klauder-Weldon Skein Dye Machines, Motor Driven, 12 to 80 stick.
1—Hetherington 54x50 double cylinder Worsted Card.
1—Tolhurst 40" copper basket **Extractor.**
5—Uni. No. 50 Franklin Spring Winders.
4—H & B 120 spdl. 5½" ga. x 4½" Ring Twisters with Indiv. motor drive, 1928.
11—H & S, 168 spdle, 4" p., cap trap twisters, 1922.
4—H & S. sgl. baller Gill Boxes, 7/16" p.
2—Uni. No. 90 Winders with Bunch Bldrs.

We specialize in Worsted Yarn Machinery

FRANK G. W. McKITTRICK
60-64 Fletcher St., Lowell, Mass.
Textile Machinery and Equipment

STEEL HEDDLES

1,000,000 Flat Steel Heddles, 9".
1,450,000 Flat Steel Heddles, 10".
200,000 Flat Steel Heddles, 12½".
1,000,000 Flat Steel Heddles, 14".

HARNESS FRAMES

27,500 Frames for 10" Heddles (45"-72" long.)
1,500 Frames for 12" Heddles (64"-70"-81".)
5,000 Frames for 14" Heddles (72"-76"-80".)

McCAFFREY
Box 495, Pawtucket, R. I.

"SEARCHLIGHT"
IS
Opportunity Advertising

—to help you get what you want.

—to help you sell what you no longer need.

Take Advantage Of It

For Every Business Want

"Think SEARCHLIGHT First"

G-7

FOR SALE

2—Hot Air Slashers.

80,000 **Automatic Bobbins for C. & K. Looms,** 7½ inches in length with feeler holes.

WILLIAM F. READ & SONS COMPANY
1218 Snyder Ave., Philadelphia, Pa.

FOR SALE

Clayton 8x6 Air Compressor

ATLAS BRAID CO., Pawtucket, R. I.

SPECIALS

1—6 sp. No. Chelmsford 11-in. gge. **Baller.**
1—10 sp. No. Chelmsford 11-in. gge. **Baller.**
1—20 sp. No. Chelmsford 5-in. gge. **Baller.**
3—60-in. **C&M** 2-cylinder **Brushers.**
8—Sets of 3—48x48-in. D. & F. **Woolen Cards.**
1—Set of 3 Cashiko 48x54-in. **Woolen Cards** with tape condenser.
4—Sets of D&F 60x54-in. All Iron **Woolen Cards.**
1—66-in. Birch Bros. 4-bowl **Continuous Crab.**
1—72-in. Knowles (Nottingham) 2-bowl **Crab.**
1—64-in. Windle **Doubling, Measuring** and **Winding Machine.**
1—66-in. P. & W. **Doubling** and **Tacking Machine.**
1—72-in. Windle **Doubler and Winder.**
1—Set of 17 Butterworth 23x66-in. face, tinned steel **Dry Cans.**
1—12 arm Bailey **Yarn Dryer.**
1—60-in. Kenyon 150-yd. Return **Tenter Dryer.**
1—60-in. Hurricane Carbonizing **Cloth Dryer.**
1—P.&S. single **Truck Yarn Dryer.**
1—3-head Utica **Tubular Dryer.**
1—6 stack Poole **Knit Goods Dryer.**
1—5 Tier **Net Dryer** 9 ft. wide.
3—500 lb. Hussong Raw Stock **Dyeing Machines.**
1—125 lb. Smith Drum Monel Metal Rotary **Hosiery Dyeing Machine,** motor.
1—250 lb. Smith Drum Monel Metal Rotary **Hosiery Dyeing Machine.**
1—300 lb. Hussong **Yarn Dyeing Machine,** motor.
4—10-ft. Rodney Hunt Type **Piece Dyeing** and **Bleaching Machines,** motor driven.
4—40-in. Tolhurst **Copper Basket Extractors.**
2—72-in. Broadbent **Extractors,** bottom vertical motor drive.
1—48 in. Jas. Hunter 4-cylinder **Garnett.**
1—60-in. Smith & Furbush 2-cylinder **Garnett** with Blaimire Lapper.
1—60-in. **P.&S.** 2-cylinder **Garnett** with Blaimire Lapper.
24—Paramount HAL **Drying Forms** and **Tables.**
1—65-in. Lead-lined **Dye Jigger.**
5—3¼-in. S.&W. B-5, 172 N., 25-step **Spiral Knitters.**
34—3¼-in. S.&W. B-5, 200 N., 5-step rev. **Plait Knitters.**
40—3½-in. Banner, 200 N., **Split Sole Knitters.**
30—3½-in. Jenks Invincible 220 N. **Knitters.**
50—3½-in. S.&W., B-5, 220 N., 5-step rev. **Plait Knitters.**
24—3½-in. S.&W., B-5, 220 N. **Full Wrap Knitters.**
10—3½-in. Standard H Trump Bros., 220 N., 8-step **Knitters** with attachments.
30—3½-in. Banner 240 N. **Split Foot Knitters.**
6—3½-in. Banner 260 N. **Split Foot Knitters** with Ribbers, etc. to balance.
100—3¾-in. S.&W., model K, 240 N. **Knitters** with attachments.
30—3¾-in. Banner, 260 N. **Knitters** with balancing equipment.
31—3¾-in. S.&W., model K, 260 N. **Knitters** with attachments.
10—8½-in. cut Cooper **Spring Needle Knitters**—11 in. to 23 in. dia.
1—44-in. Steitz 6 cut Hand Power **Knitter.**
1—36-in. Stoll 7 cut Hand Power **Knitter.**
1—11½-in., 12½-in., 13½-in. Leighton 7 cut, 2 feed **Knitters,** single rack pattern wheels.
6—Grosser **Hand Machines,** 5, 7 and 8 cut, 18-in. to 20-in. needle bed.
500—40-in. Draper model K **Looms.**
38—C.&K. 6 and 8 space Brake Lining **Looms.**
250—8 pt. to 26 pt. **Loopers.**
1—14 Bowl Butterworth **Warp Mercerizer.**
9—300 sp. D.&F. **Mules.**
1—90-in. Greene 24 roll Double Acting **Napper.**
1—42-in. Parkhurst 2-cylinder **Burr Picker.**
1—Crawford and one Hurricane Underwear and Hosiery **Press.**
2—74-in. Gessner **Apron Press Finishing Machines.**
1—86-in. Miller **Cloth Press.**
1—60-in. Krohnert 4-color **Printing Machine.**
4—92-in. D.&F. **Dresser Reels** with creels, etc.
1—4-section Saco **Lowell Hot Air Slasher,** 10 beam creel.
1—50-in. Swiss **Silk Rubbing Machine.**
1—54-in. American 18-burner **Gas Singer.**
1—80-in. Butterworth 3-burner **Gas Singer.**
200—240 sp. Whitin 3¼-in. gauge tape driven **Spinners.**
4—86-in.x12-ft. Delaney **Cottage Steamers.**
1—30-ft. Van Vlaanderen 60-in. **Tenter Frame.**
50—6 sp. No. 50 **Universal Winders.**
15—20 sp. No. 90 **Universal Winders.**

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33 West 42 Street, New York, N. Y.
CABLE ADDRESS "LIQUIDATE" NEW YORK

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Stock Bushings for Electrical Motors

OF OUTSTANDING importance in mill maintenance operations is the fact that you can now obtain instantly and economically from stock Bunting Electrical Motor Bushings for service replacements in over 500 different electrical motors. Write for list giving complete data including manufacturer's part number.

Other Bunting products in constant demand in the textile industry are Machined and Centered Bronze Bars, Lead Base Babbitt, 500 different stock sizes of general purpose bronze bushings and bearings, and patterns for over 20,000 different bronze bushings and bearings made to blueprint.

THE BUNTING BRASS & BRONZE CO.
TOLEDO, OHIO
BRANCHES and WAREHOUSES:
New York, Brooklyn, Chicago, Boston, Detroit, Cleveland, Philadelphia, Dallas, Kansas City, Los Angeles, Seattle, San Francisco, Export Office: Toledo, Ohio

BUNTING
QUALITY
PHOSPHOR BRONZE
BUSHING BEARINGS
PATENTED

ALLIGATOR
TRADE MARK REG U.S. PAT. OFFICE
STEEL BELT LACING

Distinctive Among Belt Lacings

Only Alligator Steel Belt Lacing combines the features of (1) a smooth, flexible, rocking joint (2) great surplus strength (3) preservation of the belt ends and (4) easy, rapid application with a hammer as the only tool. It compresses the belt end in a powerful vise-like grip. No holes to punch. Often lasts the full life of the belt. Suitable for all types of belting. Eleven sizes. Made also in Monel Metal. Sold throughout the world.

FLEXIBLE STEEL LACING COMPANY
4634 Lexington Street Chicago, Illinois
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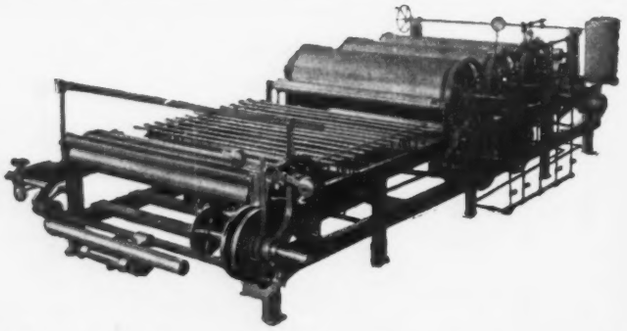

More than 6 times as much rayon and acetate yarn is sized on "JOHNSONS" as on all other rayon sizers in the world combined!

Hundreds of users prefer the "Johnson" because it improves the quality of warps, reduces broken ends, gives control over stretch and temperature, and is so flexible it may be used for rayon and acetate yarns with equal success.

Write TODAY for free, descriptive folder.

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PIERCY and HOLSMAN STS., PATERSON, N. J.
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for ALL Textiles
from Raw Stock to Finished Products
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Tenter Dryers - - - Insulated Housings & Fan Systems
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THE features embodied in our AGERS are attracting a great deal of interest among those who use textile finishing machines.

Space does not permit a detailed description. Why not write us for complete data.

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Dept. T-12, Providence, R. I.
Chicago Office: 20 No. Wacker Drive

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TRADE MARK REG'D U. S. PAT. OFF.

SAVE MONEY

Make your own Hydro-sulphites from ESOTOO SO_2 in your own plant as needed—you save one-third the cost—or more.

Our Advisory Service

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Immediate Delivery from nearby stocks.

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Manufactured by our own patented, exclusive process . . . it meets every specification of the textile industry. Immediate delivery from 36 convenient distributing points.

• ESOTOO AS AN ANTICHLOR

An effective, economical antichlor that avoids danger of tendering.

• STRIPPING COMPOUNDS

that are economical and dependable. Let us recommend one for your needs.

• FREE FLOWING 89% ZINC SULFATE

Chemically controlled crystalline Zinc Sulfate that meets the most rigid specifications.

• ZINC DUST

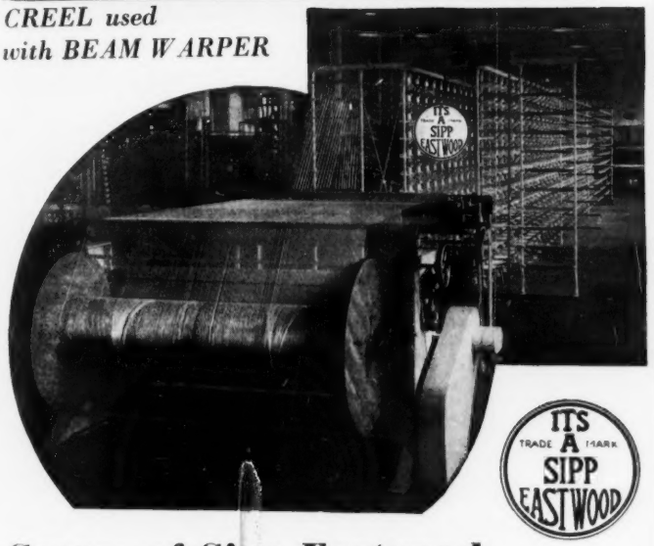
Superior—Uniform—Dependable.

VIRGINIA SMELTING CO.

West Norfolk—Virginia

F. A. Eustis, Sec., 131 State St., Boston and 75 Beaver St., New York.

CREEL used with BEAM WARPER



ITS A TRADE MARK SIPP EASTWOOD

Scores of Sipp-Eastwood Creels Now in Use!

The use of Sipp-Eastwood Over-End Magazine Cone Creels with beam warpers or Sipp-Eastwood High-Speed Horizontal Warpers is now the accepted method employed by leading manufacturers everywhere for high-speed warping of rayon and acetates yarns.

BECAUSE — It cuts warping costs as much as 80% — makes warps at 280 to 320 yards a minute — improves warps and woven fabrics.

SIPP-EASTWOOD CORPORATION

Manufacturers of high-speed warpers, over-end cone creels, oil-less bearing winders, redraw frames, quillers, re-beamers, edge warpers, and folding and measuring machines.

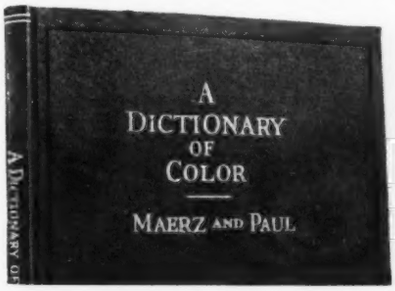
Keen & Summer Streets **Paterson, N. J.**

REPRESENTATIVES: Carolina Specialty Co., Charlotte, N. C.

MAGAZINE CONE CREELS

To *help you solve your* COLOR *problems*

Here is an invaluable tool for everyone who has to specify, identify or work with colors. In specially made, non-fading inks it reproduces every known color, and color names that represent the consensus of opinion of the highest authorities. The authors worked over seven years on this book, handling thousands of color samples from every available source.



What others say

"One of the most sincere and successful attempts yet made to assemble a standard dictionary of color and color names."
Women's Wear Daily

"For anyone having to do with color in all of its applications, this is an invaluable reference."
Scientific American

"Will be a valuable aid not only to those who are constantly required to reproduce colors having specific names but also in the selection and matching of colors for many purposes."
American Dyestuff Reporter

"One of the greatest books on color ever published."
Paint, Oil and Chemical Review

"Comprehensive . . . thorough . . . painstaking."
National Cleaner & Dyer

"Exhaustive in scope and depth of treatment."
Industrial and Engineering Chemistry

"A very unusual and fine book."
American Paint Journal

Dictionary of Color

***by* A. Maerz**

Director, American Color Research Laboratory

***and* M. Rea Paul**

Consulting Colorist, Research Laboratories, National Lead Company

207 pages, 9x12, 56 color pages, $12.00 postpaid.

THIS book was prepared with the cooperation of the Textile Color Card Association of the United States, Inc., Robert H. Sterrett, the National Silk Dyeing Company of Paterson, N. J., and other authorities. Its main feature is a series of fine color plates, printed in permanent inks, reproducing over 7,000 colors. These are arranged according to the eight main divisions of the spectrum, in handy reference form. Each page of colors is accompanied by a key page of color names, with added space for new names, notes, etc. In addition, the book offers a table showing the frequency of use of the principal color names — a comparison table showing the principal color names in several languages—spectroscopic and photometric measurements of various colors—and a secondary index where synonymous names are grouped under main names.

See this book 10 days on approval

If you are a textile designer, chemist or colorist—a manufacturing executive—a factor or buyer—you will find this new book invaluable. You are invited to use it for 10 days. Then, only after you have examined it at your leisure are you asked to decide if this isn't a book that you will find of constant usefulness and value—a book you will want to own.

Send this coupon today

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Send me **Maerz and Paul—Dictionary of Color**, for 10 days' examination subject to approval or return. At the end of 10 days I agree to pay $12.00 plus a few cents for postage and delivery, or return the book postpaid. **(We pay postage on orders accompanied by remittance.)**

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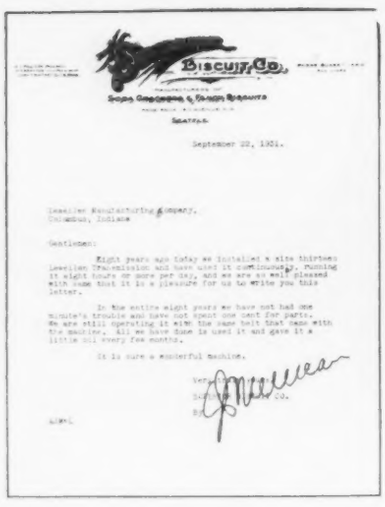


September 22, 1931.

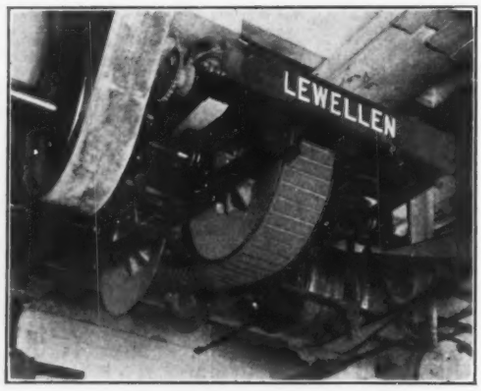
Lewellen Manufacturing Company,
Columbus, Indiana

Gentlemen:

Eight years ago today we installed a size thirteen Lewellen Transmission and have used it continuously, running it eight hours or more per day, and we are all well pleased with same that it is a pleasure for us to write you this letter.

In the entire eight years we have not had one minute's trouble and have not spent one cent for parts. We are still operating it with the same belt that came with the machine. All we have done is used it and gave it a little oil every few months.

It is sure a wonderful machine.



This Lewellen Variable Speed Transmission was installed at Superior Biscuit Co., Seattle, Wash. in 1923. Eight years later they express entire satisfaction with its service.

September 9, 1933

Lewellen Manufacturing Company
Columbus, Indiana

Attention D. K. Lewellen

Gentlemen:

As we were in the market for a new transmission, it was, indeed, a pleasure for us to call up the Chain Belt Company for another Lewellen Transmission, for frankly and honestly it has given us such good service that we feel that it is the best transmission built.

The transmission was installed during my absence to the World's Fair and I just arrived back today and it looks fine. The boys here at the plant are very much pleased with same.

With kindest regards.

Yours very truly,

Not a cent for repairs in eight years! The sincerity of this letter above is proven by their letter on the right, when they ordered their second unit.

Ten years of trouble-free service brings their verdict—a repeat order. Can we add anything to this proof of Lewellen efficiency? Send for catalog.

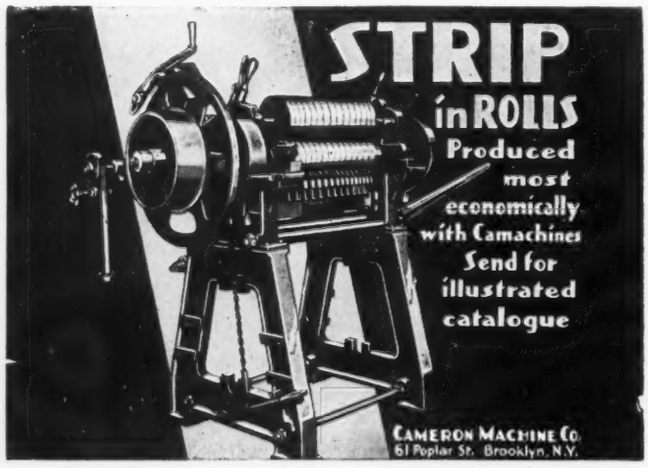
THE *Lewellen* MANUFACTURING CO.
COLUMBUS, INDIANA

"It costs no more to have the best"

Drop Forgings
Wrenches Screw Machine Work
Bolts Nuts Cap Screws
Eye Bolts Studs

We specialize to the Textile Trade

RHODE ISLAND TOOL CO.
PROVIDENCE, R.I.



INVERSAND ZEOLITE WATER SOFTENERS
(Over 200 sizes)

BASEX "NATURAL" ZEOLITE
and
HUNGERFORD WATER FILTERS

1933 Catalog and Sample of
Zeolite Sent on Request

HUNGERFORD & TERRY, Inc.
CLAYTON, NEW JERSEY

MAKE:

Cotton and Linen Fire Hose
Gasoline Service Hose
Woven Cable Coverings, etc.

on Royle Circular Looms. Seamless, continuous products woven to standard specifications, hollow, or applied as a covering. Product variable in diameter, fineness, and tension.

Demonstrated at Royle factory

JOHN ROYLE & SONS
Paterson, New Jersey

OK 100 Years ago

but Not Today!

Hand mopping in an attempt to clean mill floors is a waste of time and labor . . . just as would be hand spinning or weaving in an attempt to produce goods.

The way to clean floors effectively and economically is to scrub or polish a *room at a time* . . . with scrubbing or polishing machines as up to date as the latest spinning frame or weaving loom.

The *Finnell* shown here is just one of eight *Finnell* models. This one is especially popular among textile mills because it scrubs the floor and also *picks up the water* in the same operation, leaving the floor clean and dry. There's no chance for bobbin boys to track it up while still wet . . . reduced likelihood of workers slipping on a wet floor.

DEMONSTRATION FREE. Wherever you are, whatever the size of your mill, there is a *Finnell* that will serve you by saving time and money . . . and a *Finnell* representative who will gladly show you how. Write or wire *Finnell System, Inc.*, 1912 East Street, Elkhart, Indiana. Canadian Distributors: Dustbane Products, Ltd., 207 Sparks Street, Ottawa, Ontario.

2 IN 1

The Finnell Combination. The machine that makes mopping an extravagance.

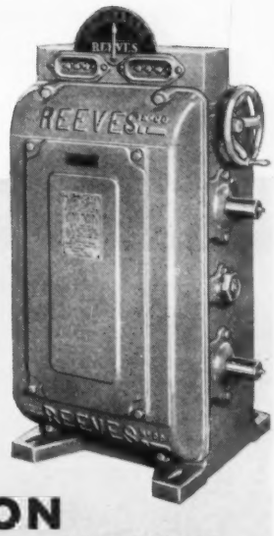
FINNELL

Est. 1906

ELECTRIC FLOOR SCRUBBER-POLISHER

WHY

the REEVES is the most widely used VARIABLE SPEED TRANSMISSION in the Textile Industry



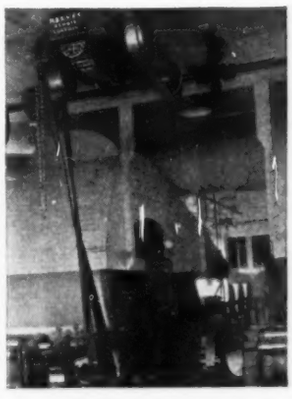
● PROVIDES *infinite, accurate* speed adjustability to *any* driven machine used in cotton, wool, silk and rayon manufacturing and finishing.

Available in *exactly* the proper size, design, speed range, and type of control for every textile plant requirement. Handwheel control, remote push button control, or complete automatic control as needed.

Every feature—including basic design and sturdy, compact construction—*time-tested* in exacting service. Facilities in all leading textile centers for specialized engineering service.

MODERNIZE YOUR SLASHERS THIS WAY—

On slasher shown at right, obsolete step-cone pulleys are replaced by a REEVES Transmission. This puts *instant, accurate* control of drying time at operator's finger tips—and insures *absolute uniformity* in drying of warp yarns. *Exactly the proper rate* of yarn travel over the cylinder is obtained to match *every* changing requirement. Costly pulley changes and belt slippage are eliminated. Delivery of uniformly pliable, elastic warp to looms reduces end breakage.



★ REEVES ★

Variable Speed TRANSMISSION

REEVES PULLEY COMPANY, Columbus, Ind.

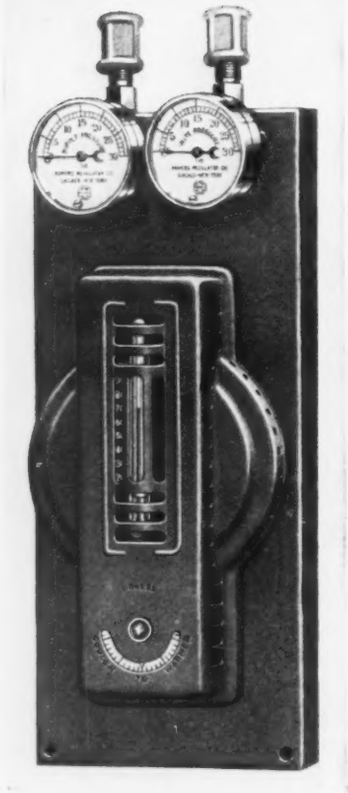
Without obligation, send copy of 74-page catalog W-99. 12-33

Name.....

Company.....

Address.....

POWERS
Room Temperature Control



1

Reduces Heating Costs 15 to 40%

2

Helps to End Stops and Delays in starting looms, spinning frames, knitting and finishing machines

3

Improves Quality of product

4

Increases Output of workers and machines

If room temperatures in your mill are "controlled" by hand or by worn-out obsolete controls don't be surprised if you find temperature fluctuations of 5 to 15° F. above or below the proper point. By stabilizing room temperature in each department POWERS *automatic* control will immediately help you to gain the valuable advantages listed above. May we submit an estimate? There's no obligation.

THE POWERS REGULATOR COMPANY

40 Years of Specialization in Temperature Control

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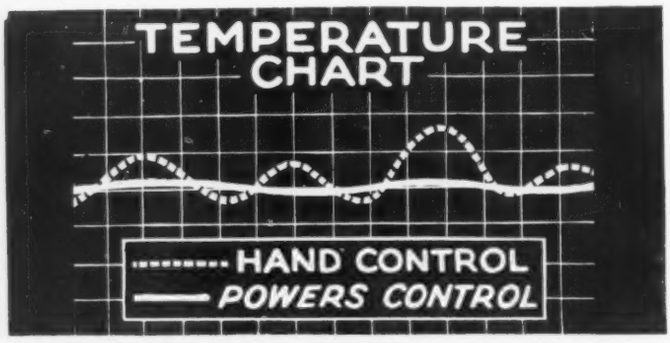
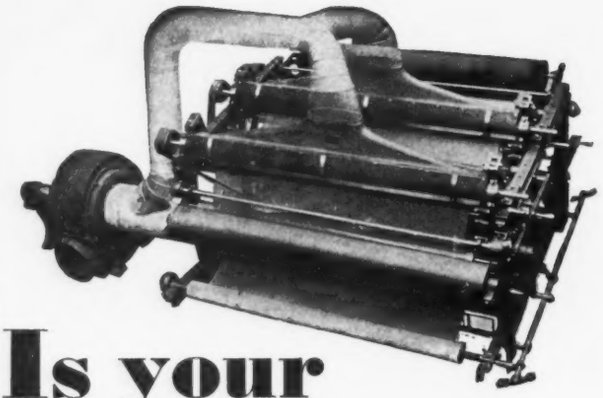




Is your CLOTHROOM *a quarter century behind* your warping, winding, & weaving departments?

IN nearly 50% of textile plants the same methods are employed in the clothroom today that were popular a quarter and even a half century ago.

LONG-DRAFT spinning, high-speed warping, automatic looms, faster winding, and sizing — all operations have been speeded and wastes eliminated except in the clothroom, where the long tables and piles of cloth may be seen just as at the beginning of the century. Yet a dollar saved in the clothroom has the same value as one saved in any other department of the mill.

UNFORTUNATELY, clothroom wastes chiefly take the form of payroll and, therefore, are not as obvious as those in other departments. These unnecessary wastes — direct and indirect — often amount to hundreds of dollars a month, and in a year or so to many times the cost of Hermas Automatic Shears, which will cut your clothroom costs, speed up work, and produce cleaner fabrics of more uniform appearance.

THE improved suction system in Hermas Shears makes it possible to handle goods never before sheared on a machine. Hermas Automatic Shears will trim and clean all hanging strings, loops, and floats from the selvage and both sides of the fabric at 60 to 100 yards a minute. These are the only automatics to shear within ONE FOOT OF THE SEAMS. They are being used in the largest rayon, cotton, and silk mills in the country for the heaviest as well as the sheerest fabrics.

NOW that the NRA has doubled and tripled the clothroom costs of many plants, it will pay you to write today for complete details on mechanizing your clothroom with our 4-knife shears. (We also make a cheaper model with two blades. This is somewhat slower but will do entirely satisfactory work.)

PUT a Hermas Shear on your 1934 machinery budget — write for information regarding models and prices TODAY!

HERMAS

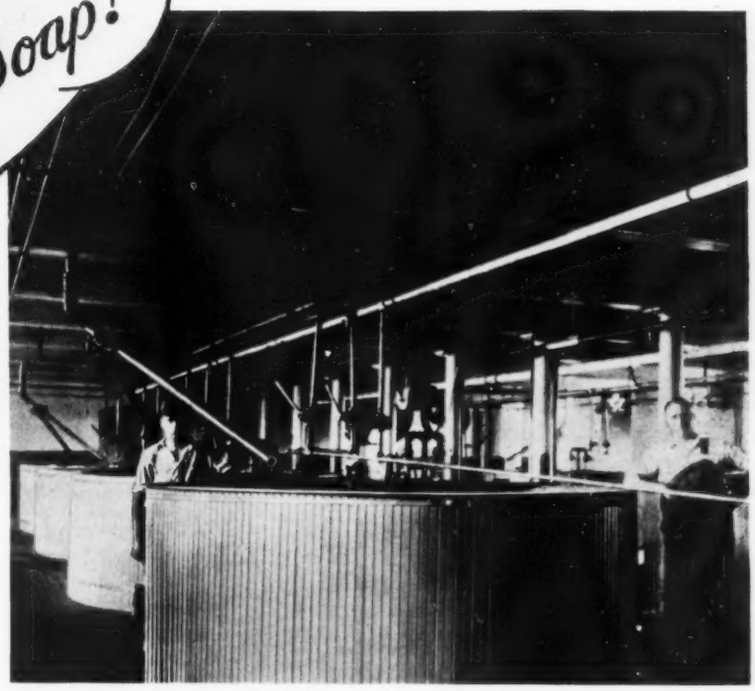
HERMAS MACHINE CO.

Cloth room machinery.

Warburton Ave., Susquehanna R.R. Hawthorne, N. J.

Southern Representatives: Carolina Specialty Co., Charlotte, N. C.

Two Kettles tell a Story of Progress in Soap!



IN 1918 a big overgrown cast iron pot — one could hardly call it a kettle—with no means of controlling the temperature on the mix, with guesswork the biggest factor in heating the soap ingredients, and holding but 400 gallons . . . Today, six great kettles, each holding more than a carload of materials, and boiled with steam heat, with temperature and pressure under close scientific control . . .

There, in the simple matter of kettles, you have a striking picture of the progress and advancement of Original Bradford. Every other piece of equipment in the plant, the plant itself, and the products reflect in the same way the persistent work of improvement. The plant has grown from a small, wooden structure to a big, modern, granite building, five stories high, 50 feet wide by 350 feet long, with five water wheels and an ample supply of water. The business has progressed from a local service built around a few neighborhood mills to one of national proportions, supplying all types of textile soaps to mills all through the country. There can be but one basic reason for such progress.

Original Bradford has more than satisfied an ever growing list of customers. You'll find it profitable to bring *your* soap problems to Original Bradford.

◆

Bradford Brand Olive Fig . . . English Crown Potash Soap
O.B.S. Gallipoli . . . Olive Finishing . . . Flake Soaps
Pure Palm and Extra Palm . . . Cylonol
Superol . . . Bradol . . . Soapol

ORIGINAL BRADFORD SOAP WORKS, INC.

WEST WARWICK, RHODE ISLAND

1883 FIFTY YEARS 1933

SERVING THE TEXTILE INDUSTRY OF AMERICA

In December, 1883, Albert Birch arrived and located in Boston as the American representative of his father, William Birch of Manchester, England, the recognized authority in England and inventor of the world known scutchers, cloth openers, angular guides, open soapers, piece-end sewing, and many other machines used in the finishing of all kinds of textile fabrics. A few years later he erected his shops at Somerville and ever since has been developing and inventing improvements.

OUR PRODUCTS

For Cotton Finishing

Scutchers
Mangles
Padders
Tommy-dodds
Squeezers
Washing Machines
Plaiter-down
Open Soapers
Angular Guides
Chain Openers for Pillow Tubing
Conical Openers
Conical Expanders
Roller Stretchers
Adj. Spiral Opening Rollers
Dye Jigs
Box Dyeing Machines
Warp Dyeing Machines

Woolen & Worsted Finishing Machines

Cloth Opening and Folding
De-Tacking
Vacuum Extracting
Continuous Crabbing
Yorkshire Crabbing
Steam Finishing
Dewing
Cloth Carbonizing
Gas Singeing
Squeezers
Tacking
Reel Dyeing
Dye Kettles
Warp Dyeing
Warp Coiling
Roller Stretchers

For Plush Finishing

Open Width Continuous Scouring Machines
Vacuum Extractors
Cloth Opening and Folding Machines
Conical Openers
Dye Kettles, etc.

Piece-End Sewing Machines

"Coronation"
"Excel" and "Gray Room"
Merrow flat seam heads set on Gray Room (R-H) type stands, also on portable stands to run by foot or motor.

Rollers

Iron, Brass, Rubber, Wood, Spiral-Conical.

Founded in England 1764
Established in America 1883

Albert Birch, President

Incorporated 1933
Cable Address "Topaz Boston"

BIRCH BROTHERS, INC.

SOMERVILLE MACHINE WORKS

Associates: Harold W. Birch, Clifford W. Birch, Stanley W. Birch

Dyeing and Finishing Machinery for Cotton, Woolen, Worsteds and Pile Fabrics

SOMERVILLE, MASS., U. S. A.

BIRCH TREE

BIRCH TREE

INDEX TO ADVERTISERS

This index is published as a convenience to the reader. TEXTILE WORLD assumes no responsibility for errors or omissions. Where an * precedes a name, it indicates more complete data will be found in 1932-1933 Consolidated Textile Catalogs.

	Page
*Abbott Machine Co.	153
Aberfoyle Mfg. Co.	123
Acadia Mills	122
Acme Knitting Machine & Needle Co.	154
Adolff Bobbin Co.	127
*Allis-Chalmers Mfg. Co.	42
American Bobbin Co.	128
American Enka Corp.	125
American Tool & Machine Co.	34
Andrews & Goodrich, Inc.	153
Arlington Mills	122
Armstrong Cork & Insulation Co.	118
*Arnold, Hoffman & Co., Inc.	142
*Atlas Electric Devices Co.	130
*Atwood Machine Co., The	94
Ballentine & Sons, P.	Inside Front Cover
*Bausch & Lomb Optical Co.	148
Birch Brothers, Inc.	170
Bodden & Son, Ltd., Wm.	122
Boger & Crawford	121
*Borne Scrymser Co.	138
Brinton Co., H.	25
Bristol Co., The	153
Buffalo Electro-Chemical Co.	140
Bunting Brass & Bronze Co.	164
*Butterworth & Sons Co., H. W.	11
Cameron Machine Co.	166
Carbide & Carbon Chem. Corp.	8-9
Carrier Engineering Corp.	35
*Climax Tube Co.	172
Clinton Co.	144
Clipper Belt Lacer Co.	153
*Cole Mfg. Co., R. D.	148
*Colgate-Palmolive-Peet Co.	119
Corn Products Refining Co.	146
Cramerton Mills	122
*Crane Mfg. Co.	154
Crawford Mfg. Co.	155
Dana Warp Mills	126
*Dary Ring Traveler Co., The	130
*Davis and Furber Machine Co.	158
Diamond Alkali Co.	141
*Dinsmore Mfg. Co.	155
Draper Corporation	3
*duPont de Nemours & Co., Inc., E. I. Dyestuffs Division	139
Durant Mfg. Co.	124
*Duriron Company, Inc.	146
Electro Bleaching Gas Co.	135
Fabric Machine Co.	158
Falls Yarn Mills	120
Finnell System, Inc.	167
Flexible Steel Lacing Co.	164
Ford Co., J. B.	137
Foster Machine Co.	21
*Foxboro Co., The	Inside Back Cover
Frankel Bros.	130
Franklin Machine Co.	158
*Franklin Process Co.	47
Furfiber Corp., The	118
General Dyestuff Corp.	143
*General Electric Co.	28
Gilet Carbonizing Co., Inc.	126
Givaudan-Delawanna, Inc.	136
Globe Dye Works Co.	129
Green River Mills, Inc.	120
H. & B. American Machine Co.	7
Halliwell Co., The	124
Haring & Stephens Co.	158
Hart Products Corp., The	149
*Harwood & Son, Geo. S.	158
Heineman Corp., Oscar	132
Hemphill Co.	23
Henry, Andrew K.	124
*Hermas Machine Co.	168
Heveatex Corp.	144
Hodgson, Inc., Walter W.	128
Howard Bros. Mfg. Co.	40
Hungerford & Terry, Inc.	166
*Hunt Machine Co., Rodney	93
*Hunter Machine Co., James	159
*Hurley-Johnson Corp.	146
Industrial Rayon Corp.	54
*International Nickel Co., Inc.	39
*Ives Co., L. T.	157
Jasper-Groz Needle Co., Inc.	156
*Jenkins Bros.	147
*Johnson, Charles B.	164
Kaumagraph Co.	120
Kem Products Co.	149
Kent Mfg. Co., The	128
Kenyon & Son, D. R.	158
Knitwear Industrial Exposition	22
*Laurel Soap Mfg. Co.	142
Lawrence Leather Co., A. C.	4
Le Bon Bleach & Dye Works, Inc.	122
Lestershire Spool & Mfg. Co.	92
Lewellen Mfg. Co.	166
Link-Belt Co.	6
Loper Co., Ralph E.	152
*Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.	17
*Mathieson Alkali Works	52
Mayor & Son, Thomas	122
McCord, H. M.	152
McGraw-Hill Catalog & Directory Co.	48
McGraw-Hill Publishing Co., Inc.	150-151
*Merrow Machine Co., The	157
Monomac Spinning Co.	122
Montgomery Co., The	120
Murdock & Geb Co.	126
National Adhesives Corp.	148
Naumkeag Steam Cotton Co.	130
New Departure Mfg. Co.	36
*New England Butt Co.	164
*N. Y. & N. J. Lubricant Co.	49
Niacet Chemicals Corp.	134
Nonquitt Mills	122
*Norma-Hoffmann Bearings Corp.	159
*Onyx Oil & Chemical Co.	133
Original Bradford Soap Works, Inc.	169
*Pairpoint Corp.	129
*Paramount Textile Machinery Co.	155
Parks-Cramer Co.	149
Pearson & Sons Co., Jos. T.	156
Pequot Mills	130
*Perkins & Sons, Inc., B. F.	12
*Permutit Co.	10
*Philadelphia Drying Machinery Co., The	164
Philadelphia Quartz Co.	140
Pisgah Mills, Inc.	120
*Powers Regulator Co.	168
Presto Mfg. Co.	152
Quissett Mill	117
Railway Express Agency, Inc.	132
Reeves Pulley Co.	167
*Rhode Island Tool Co.	166
*Rhode Island Warp Stop Equip. Co.	31
Riggs & Lombard, Inc.	14
*Roberts Filter Mfg. Co.	148
Rochester Engineering & Centrifugal Corp.	44
*Rodney Hunt Machine Co.	93
Rohm & Haas Co., Inc.	140
Rome Soap Mfg. Co.	146
*Royersford Needle Works, Inc.	26
Royle & Sons, John	166
Ryerson & Son, Inc., Jos. T.	159
*Sargent's Sons Corp., C. G.	16
*Scholler Bros., Inc.	138
*Scott Co., Henry L.	130
Scott & Williams, Inc.	19
Scovell, Wellington & Co.	152
Sherwin-Williams Co., The	33
Sinclair Refining Co.	45
*Sipp-Eastwood Corp.	165
SKF Industries, Inc.	15
Socony-Vacuum Corp.	32
*Solvay Sales Corp.	144
*Sonoco Products Co.	30
*Southworth Machine Co.	152
Speedway Mfg. Co.	154
Sperry Co., D. R.	144
Stafford & Holt, Inc.	156
Standard Brands, Inc.	134
Standard-Coosa-Thatcher Co.	131
Standard Pressed Steel Co.	156
Standard-Trump Bros. Machine Co., Inc.	20
Stanley Works, The	126
Sturtevant Co., B. F.	128
Tallapoosa Mills	122
Taylor Instrument Companies	13
Tennessee Eastman Corp.	91
*Terrell Machine Co., Inc.	122
*Textile-Finishing Machinery Co., The	5
Tompkins Bros. Co.	157
*Torrington Co., The	37-38
*U. S. Ring Traveler Co.	127
*U. S. Rubber Co.	50-51
Van Ameringen-Haebler, Inc.	138
*Veeder-Root, Inc.	Back Cover
Victor Chemical Works	142
Virginia Smelting Co.	165
Viscose Co., The	Front Cover
Vultex Corp. of America	148
Warp Compressing Machine Co.	29
Waterman Currier & Co., Inc.	131
Weimar Bros.	132
*Westinghouse Electric & Mfg. Co.	41
White Co., C. B.	43
Whitin Machine Works	18
*Whitinsville Spinning Ring Co.	131
Whitman Co., Inc., Wm.	122
Wildman Mfg. Co.	27
*Willcox & Gibbs Sewing Machine Co.	24
Wilson Co., Charles T.	134
*Wolf & Co., Jacques	145
Wolstenholme Sons & Co., Inc., Thos.	124

SEARCHLIGHT SECTION

Classified Advertising

BUSINESS OPPORTUNITIES	160
EMPLOYMENT	160
EMPLOYMENT SERVICE	
Raymond Service, Inc., Chas. P.	160
WANTED TO PURCHASE	161
USED AND SURPLUS EQUIPMENT	160-163
Ainslie Knitting Machine Co., Inc.	161
Ambler Textile Machinery Co.	162
Atlas Braid Company	163
Batey, Thomas E.	162
Bemis Bro. Bag Co.	161
Beuret & Co., Inc.	161
Cady, A. J.	163
Comer-Kimmel Machinery Co.	161
Consolidated Products Co.	162
Consolidated Sewing Machine & Supply Co.	161
Eagle Beef Cloth Company	161
Fyans, A. F.	161
Ginsberg, C. I.	162
Horton, Harold W.	163
Kerwin, Michael	162
Lassonde, Joseph M.	160
Machinery Liquidating Co., Inc.	163
McCaffrey & Son, Inc., L. J.	163
McCloskey, Inc., John J.	162
McKittrick, Frank G. W.	163
New York Machinery Co.	161
Pawtucket Mill Supply Co.	162
Pernick Co., Inc., Joseph	162
Read & Sons Co., Wm. F.	163
Slaybaugh, James	161
Solomon & Co., Inc., Robert	163
Stephenson, Harry	162

Searchlight Section pages 160-163

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